eiron

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Improved Wire-Rope - Attachments.

A simple, but very useful, invention has lately been brought out in England which may ultimately come into considerable use among miners. The invention consists in an improved method of fastening together wire be. An old form of fastening was the use conical thimbles in which, after the end of conical thimbles in which, after the end of the rope was inserted, the diameter was conically increased by bending the wires, by driving spikes into the core of the rope, or by casting hot metal round it; in other cases the ropes have been pressed together by bolts and nuts, eccentrics, levers, &c. All these arrangements allow a more or less All these arrangements allow a more or less axial strain to take place, and have the defect of weakening the rope chiefly, and in the greatest degree, at the entrance to the thimble; and, therefore, some of the wires at this place are quickly destroyed, nipped off, or worn through successively. Also in the old medes of splicing, &c., the success depends on the skill of the workman, and even when most skillfully performed the rope suffers a great deal, because through untwisting and otherwise dealing with the rope the positions of the wires and strands rope the positions of the wires and strands to each other are altered, and, therefore, the attachment of the same becomes unequal. Casting hot metal round the rope has the defect of altering the nature of the

It is to avoid and remove these defects It is to avoid and remove these defects that the patent-rope attachment has been designed. It consists principally of a conical shell or thimble provided with a hook, loop, &c., and of toothed wedges, which take up and compress the rope between them, and which automatically fasten the same, the compression of the rope corresponding to the tension. The wedges surround the rope and exert upon it a pressure concentrically, which increases the adhesion and friction, and prevents all dislocation of the threads or which increases the adhesion and friction, and prevents all dislocation of the threads or wires, so that the whole of the wires equally participate in holding the load. The wedges are provided with teeth on the inside, which indust the holds of the west. are provided with teeth on the inside, which indent the body of the rope. No damage or injury to the threads or wires can arise, because in consequence of the resistances elongation cannot take place, and the natural breaking of a rope can only arise after the limit of elasticity has been reached. As, however, the useful resistances—that is to say, the friction, &c., between wedges and rope—have to be greater than the dynamic resistances (resulting from the friction besay, the friction, &c., between wedges and rope—have to be greater than the dynamic resistances (resulting from the friction between the back of the wedges and the inner surface of the thimble), if a gliding forward of the wedges takes place and the attachment of the rope be firm, such a construction of the teeth is required as permits the use of conical wedges of such a taper as not to exert an excessive pressure on the rope, and also thimbles of very small substance. And, lastly, the wedges have a greater amount of concinnity than the thimble, and the length and thickness of the teeth decrease as they are further from the actual joint, so that the bite upon the rope gradually increases from almost nothing, until, steadily increasing, it reaches its maximum near the end of the rope.

The method of fixing is extremely simple. The end of the rope is pushed into the thimble from the lower part; then on each side of the thimble a wedge is inserted from the top end, and driven in by a few blows with a hammer; the further tightening the ensues in a self-acting manner as soon as the

a hammer; the further tightening their ensues in a self-acting manner as soon as the load is put on the rope. In order to keep the wedges in their proper place, a cotter pin is pushed through a hole at the side of the thimble. When wishing to loosen or detach the rope, a few blows on the loop of the thimble will suffice to make the wedges the thimble will suffice to make the wedge come up. It is claimed that these improved rope attachments are equally well adapted for metallic or hemp ropes, as well as for flat and round mining ropes, and for tension bars in roof constructions they have proved

A New and Economical Belting .- A foreign exchange reports that the latest pat-ent in bands used for machinery is one for an invention by which it is claimed the only good belt made of textile fabric can be produced; it is not affected by change of tem-perature, stretches very little, is thoroughly waterproof, is as durable as leather, and being without the objectionable joints and splicings of a leather belt, it runs straighter and truer. The belt is made solely of the best Russian flax, and in price is from 25 to 60 per cent. cheaper than leather belting. The unusual strength of the belting results from its being folded somewhat peculiarly, and which also accounts for its stretching so little. It is ren-dered water-proof by an entirely new process known only to the Russian Government, the peculiarity of which process gives it a marrelous grip of the pulley, and, no matter how ong the belt is used, this never leaves it. The flax belt has been in use in Russia for more than two years and a half, and it has given the greatest satisfaction.

A Stone Bridge Over the Mississippi. -A recent dispatch from St. Paul, Minn., reports the completion of the first and only ne bridge built across the Mississippi River. It is the St. Paul, Minneapolis and Manitoba Railway Viaduct, spanning the river just below the Falls of St. Anthony. It is a massive atone structure, stretching to the east points out that all fears on that score may be across the river, curving at first slightly to set aside, because, in the event of this bridge was above 134,000,000,000 feet, and this rethe left, and then running at right angles to becoming un fait accompli, a little dynamite serve has scarcely been touched yet. Louistee stream, directly to the east side landing.

the whole course being 2100 feet. The upper the whole course being 2100 feet. The upper surface of the bridge presents to the view a smooth stone roadway, carrying a double track, walled in on either side by heavy blocks of stone, high and strong enough to prevent a train from leaving the bridge, even should it be derailed. The viaduct crosses the river with 23 arches, 16 of the spans being 80 feet each. The material is granite and magnesian limestone. The width is 28 feet over all, and the hight from the springing point of the arches to the top. the springing point of the arches to the top is 50 feet 6 inches. The cost of the bridge

over-water communication. M. Vérard intends to submit his calculation to the revision of an international commission of engineers, so that the scheme may be freed from all elements of uncertainty. He will then ask her Majesty's Government to "promote in Parliament the necessary bills for the construction and working of the line.

Railway Accidents in Great Britain.

In the general report presented to the British Board of Trade on the railway acci-

The Emery Testing Machine.

In our article on "Emery Scales and Testing Machines," published in last week's issue, we undertook to give the reader some idea of the means which Mr. Emery employed in indicating loads or strains of all descriptions with an accuracy hith erto unknown. Most of our readers are perfectly familiar with the very accurate work of the Watertown testing machine. In our last article we gave in a brief manner the details of the systems employed and is 50 feet 6 inches. The cost of the bridge was \$990,000.

Bridging the English Channel.

One of the latest of the many wild schemes which are continually proposed, but never executed, is that of forming some solid means of communication between France and England. The tunneling of the English Channel, which has for some half a century occupied the the attention of the inhabitants of the adjacent countries, seems in a fair way to be superseded in the minds of certain enthusiasts by a truly magnificent—but, it is to be feared, impractible—scheme which has been devised by M. Vérard de Sainte-Anne, for a railway is 100 per presented to the British Board of Trade on the railway accidents that occurred in the United Kingdom in 1882, it is stated that the total number of persons returned to the Board of Trade as having been killed in the working of the work of a testing machine we shall attempt to explain here, and also to show what means the designer has adopted to obtain a machine entirely free from back-lash which has for some half a century occupied the attempt to explain here, and also to show what means the designer has adopted to obtain a machine entirely free from back-lash which has for some half a century occupied the attempt to explain here, and also to show what means the designer has adopted to obtain a machine entirely free from back-lash which has for some half a century occupied the attempt to explain here, and also to show what means the designer has adopted to obtain a machine entirely free from back-lash when the speciment of the english Channel, which has for some half a century occupied the attempt to explain here, and also to show what means the designer has adopted to obtain a machine entirely free from back-lash consists of two parts. The first is the method of operation. How asystem of diaphragms can be applied to the weighing of the English Channel, which has for some lall entire that occurred in the United Kingdom in 1882, it is stated that the total number of injured were of the above numb ner the details of the systems employed and the method of operation. How a system of

ferent from anything of which we have any account, and adds very materially to the ease and speed of weighing. One of the features which not only in chemical, but also in large balances, is inherent in Mr. Emery's system of weighing, is the fact that the motion of the load is so small and the consequent mo-mentum so insignificant, that the beam or pointer can come to rest quickly without a long series of vibrations on each side of the

In order to enable the reader to understand the construction of the apparatus, we have had a drawing made of the base of the machine and framework (Fig. 5), with portions broken away to show the more important features. Bearing in mind that whether the strains be those of tension or compression—that is whether in an unward or description. strains be those of tension or compression— that is, whether in an upward or downward direction—they must result in compressing the liquid in the pressure support, the reader is prepared to understand the method of operation. The resistance, or the final abutment, is found in the frame F, which is of cast iron and very heavy. This frame surrounds the two beams E E, which constitute the bed and platform of the scale, and between which is placed the hydraulic pressure support. When the strain takes an upure support. When the strain takes an upward direction these pieces are forced against the upper member of the frame. When the pressure is downward they rest on the lower portion of this frame. They have between them, in the pressure support, a pair of diaphragms inclosing a quantity of fluid, which, by means of the slender tube f, communicates with the pressure column of the weighing apparatus. These pieces E E are surrounded by a yoke, B D C D, in which they are perfectly free and with which they have no rigid connection. The strain of the lead is taken by this outside yoke entirely, and through it communicated to the abutment pieces E E. These two pieces, with the diaphragm between them and its inclosthe diaphragm between them and its inclos-ing rings, are finished to such a thickness that they just fill the space between the two members of the frame to within, the two members of the frame to within, say, $\tau_{0.00}^{S}$ inch. This is the maximum amount of motion which is permitted. Having this arrangement of yoke and abutment pieces, it becomes necessary to hold it in position and prevent it from any lateral motion, and at the same time allow it perfect freedom in a vertical direction. This is accomplished by a most ingenious modification of the flexible plate or metal fulcrums. For example, the upper beam E is held and tion of the flexible plate or metal fulcrums. For example, the upper beam E is held and supported in position and prevented from side motion by the thin bars b b. The vertical motion is so small that the elasticity of these spring bars b b allows it to rise and fall with practically no friction.

Similar flexible bars c c, support and fix in position the lower scale beam E against horizontal motion and allow freedom of

horizontal motion and allow freedom of motion vertically. The yoke is in like manner firmly fixed against horizontal motion at its top and bottom by four pairs of tion at its top and bottom by four pairs of spring plates, two of which, a a and a' a', at the top, are attached at right angles to each other to the upper beam A B of the yoke and to the frame F, while the other two pairs at the bottom e e and e' e', also at right angles to each other, are fixed to the lower beam C of the yoke, and to the frame F. They allow perfect freedom in a vertical F. They allow perfect freedom in a vertical direction, while compelling the whole movdirection, while compelling the whole movable portion to work in a vertical line. A beam, G, is bolted to the bottom beam C of the yoke, and has its two ends extended between two pairs of initial load springs marked d d. The yoke B C D D and its contained scale beams E E bing suspended in the air by the six pans of fixing springs, as before mentioned, is now carried firmly against the beam E E by the full pressure of the load springs d d by means of two pairs of screws by the full pressure of the load springs d d by means of two pairs of screws not here shown, one pair of screws acting to apply the load of these springs d d in an upward direction, and the other in a downwarl direction. When these springs are made to bear upward against G, the yoke is resting against the lower scale beam E, transmitting the load of the springs d d through the pressure support to the upper beam E, which now becomes the bed of the scale, with its outer ends resting against scale, with its outer ends resting against the frame F at the top, while the lower beam E acts as a free platform, and the scale is then balanced ready for use with strains of tension. If strains of compression or transverse loads are desired, the load springs d d are made to act downward on the beam G, the upper beam E now acting as the free platform, and the lower beam E as the bed of the scale. The acting area of the diaphragm in this apparatus, where a strain of 75 tons is to be exerted, is 13.6 inches in diameter.

As shown in Fig. 1, the testing machine

is arranged for transverse strains. This is accomplished by putting a heavy bar across the top of the table A, which carries at its two ends suitable supports with hemispherical bearings on which the specihemispherical bearings on which the specimen rests. The outer ends of these bars are supported by braces, one of which is shown in Fig 1. The lower ends of these braces enter the slot shown near the base of D in Fig. 5. Immediately under the ram is shown a gauge for reading the deflection. The cross-head which carries the hydraulic ram is arranged in a very neat, but somewhat peculiar, manner. It is carried by two screws, the nuts of which have, both above and below, a pair of gear-wheels. A pair of intermediate gears transmit the motion from one to the other,

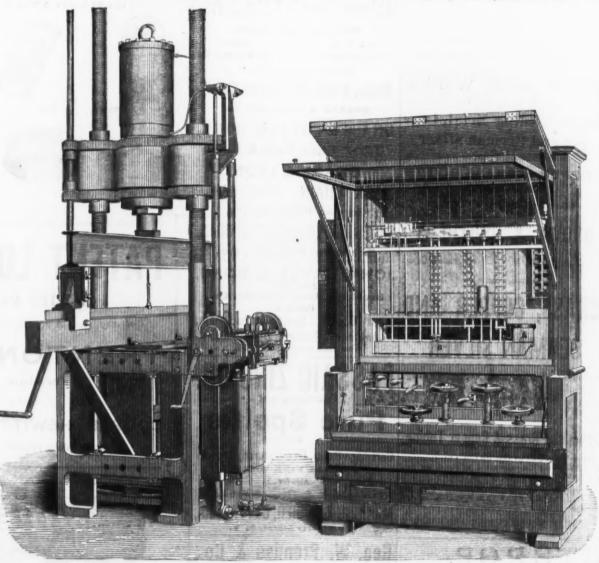


Fig. 1.-Elevation of the Machine.

Fig. 2.—Scale Beam and Case.

EMERY TESTING MACHINE, BUILT BY YALE & TOWNE MFG. CO., STAMFORD, CONN.

structed on varying principles, so as to allow for the passage at certain points of vessels with the tallest masts, while, of course, preserving as nearly as possible a level road for the line. The center supports are designed to rest on the Varne and Colbart rocks, the former serving also as a basis for a solid pier surmounted by a hotel. M. Vérard de Sainte-Anne professes to have made the most careful soundings, and is convinced that the channel bed affords a firm bacis for the nu-merous piers, about 30 in all, necessary to support his main structure. In the absence of fuller details it is impossible to say how he proposes to carry out his idea, or at what cost, but the depths and currents have been carefully studied, as we'l as the probable interruption of the work by violent storms, while the expense has been estimated on two systems involving the employment of stone-work or metal. M Vérard estimates that the work or metal. M Vérard estimates that the mail train would take about an hour and 35 minutes in passing over the bridge. In a letter to Mr. Gladstone on the subject the designer states he is convinced that sooner or ter England and France will be connected by some such scheme as that he proposes, and which he maintains is more feasible than the projected tunnel, which has given rise to so much apprehension. While he stoutly repudiates any intention on the part of

bridge between Folkestone and Cape Grisnez. vants of the railway companies or of con cylinder furnishes the power for compression. The plan provides for a series of bridges contractors; 441 persons killed and 286 injured or extension. These screws are attached to were trespassers, suicides and others, who met with accidents at level-crossings or from miscellaneous causes. In addition to the above, the companies have returned 42 persons killed and 4367 injured from accidents on their premises which cannot be considered as "railway accidents." as they were on their premises which cannot be considered as "railway accidents," as they were not connected with the movement of railway vehicles. The total number of passenger journeys, exclusive of journeys by season-ticket holders, was 654,838,295 for the year 1882, or 32,678,295 more than in the previous year. Calculated on these figures, the pro-portions of passengers killed and injured durportions of passengers killed and injured during the year, from all causes, were, in round numbers, one in 5,756,207 killed, and one in 377,135 injured. In 1881 the proportions were one in 5,760,746 killed and one in 335.577 injured. The proportions, however, of passengers returned as killed and injured, respectively, in 1882, from causes beyond their own control was one in 36,379,905 killed, and one in 815,489 injured; while in 1881 the proportion was as kigh as one in 1881 the proportion was as high as one in 27,050,034 killed, and one in 630,354 injured.

> According to the forestry bulletins, there ere but about 82,000,000,000 feet of mercantile white pine standing in 1880 in the lumber States of Michigan, Wisconsin and Minnesota,

form and bed of the scale. The second part of the apparatus of the weighing mechan-ism comprises a system of levers and a scale beam with suitable weights, and a pres column with its diaphragms, to which the pressure exerted in the testing machine is transferred by a suitable tube. The liquid in the support between the beams, being compressed, is forced against the pressure diaphragm of the pressure column. The amount of force exerted here is then weighed, and the indication read from the scale beam and the pointer which is attached to it. The reader should bear in mind carefully the distinction between the two pieces of apparatus. One is in and of itself easen tially for testing. It gives no indications of the amount of strain applied, and is a perfectly independent and disconnected apparatus. ratus. The other is an indicating mechanism, and might be adjusted to a platform scale, a weighing lock, a track scale, or, in fact, to a thousand and one other uses if neces sary, its office being solely to register or inand only about 35,000,000,000 long-leaf pine in Florida, Georgia and the Carolinas. But the estimate of long and short leaf in Alabama, Mississippi, Louisiana and Arkansas was above 134,000,000,000 feet, and this remethod of putting on and taking off its weights. This feature alone is entirely dif-

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(Continued on Page 5.)

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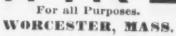
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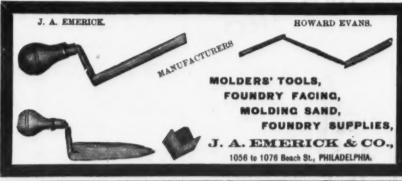
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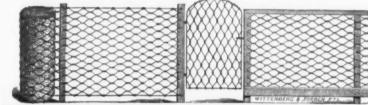
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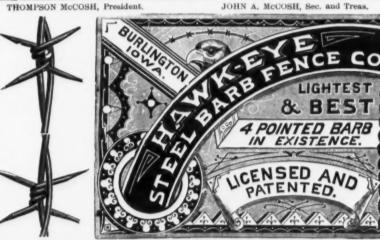
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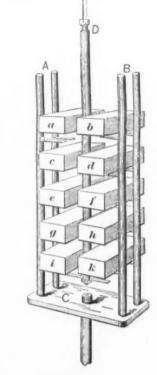
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and the whole is moved up and down by means of a crank at the left hand of the machine. This crank, through a pair of overel gears, works the vertical shaft on the machine. left-hand side with its two pinions, thus re-volving the nuts. The shaft is provided with the usual slot and feather. This makes matter of adjustment for length of specimens comparatively easy, and, at the same time, simple. The cylinder is a double-acting one, and is connected with the force-pump by means of two telescopic tubes, shown at the right-hand side, and connecting with the cylinder itself by small bent copper pipes. These telescopic tubes are arranged in such a way that no changes in the connections



Emery Testing Machines .- Fig. 3. -Si & ending Rod and Large Weights.

are needed in any part of the stroke. For extension a peculiar form of jaw secess into the bottom of the piston rod or ram, and also into a hole in the beam A. B. Fig. 5. The weighing mechanism itself consists of a weight beam, somewhat similar to that shown in Fig. 6, with its indicator-rod and a series of suspension-rods for carrying weights. This beam in the scale shown is not connected directly to a pressure column, but is moved by a large steel beam 25 irches deep by 10 inches in width, pivoted with plate ful-crums and moved by a pressure column shown at A in Fig. 2. Just above the block

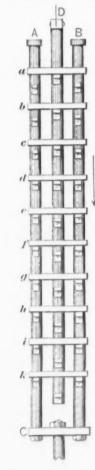
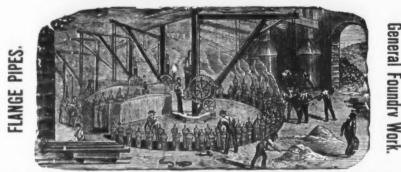


Fig. 4.—Suspending Rod and Weight.

A is shown the case containing the small pressure chamber which is connected with that in the support between the scale beams E. E. The acting area of this small pressure chamber in this machine is z_0^1 that of the ure chamber in this machine is z to that of the large one, so zo pounds on the platform A of the yoke gives I pound on the column A of the scale beam B in Fig. 2. The method by which weights are put on and taken off is in this case so entirely novel and different from anything that has been employed in ordinary weighing machi ethat we give it in detail. Fig. 4. on a large scale, shows the weights with their rod. The rod D curies on its front side a number of lugs, and is supported by a plate from the beam, the suspension spring being shown at the point marked D. The rods A and B also carr, on their fac.s a number of lugs, and are supported by the cross-head of lugs, and are supported by the cross-head C attached to one end of a rod which is operated by a lever below; a, b, c, k are the weights. The problem is to successively throw these weights upon the beam. This

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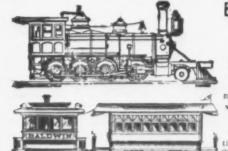
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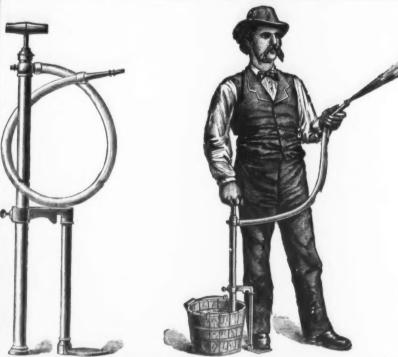
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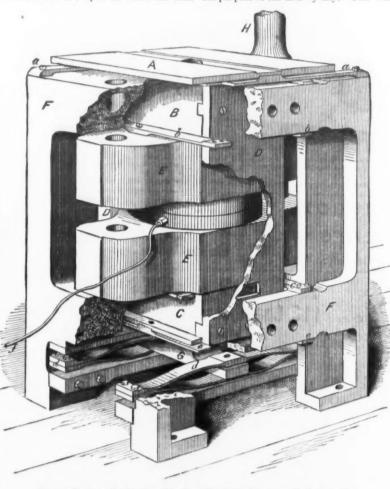
is accomplished by a downward movement of the rods A B. The lugs not being evenly spaced, this downward motion brings the top weight A in contact with the uppermost lug on the rod D. If the motion is continued, B is next dropped on the rod, and C follows. In the engraving, a, b, c have already been left by the downward motion of A B on the rod D. The weight d is beareach one of them carrying a carefully adjusted set of weights, to in number. When all of one set are upon the beam the next the purpose of the disk by day. This was a

Railway Signals.

The following is an extract from an address delivered at a recent meeting of the British Association for the Advancement of Science:

When railways were first opened they were worked without any fixed signals, unof A B on the rod D. The weight d is bearing not only on the center, but also on the side rods, and any further downward motion

The candle indicated that the train of A B would allow it to rest upon D. The other weights would be in succession deposited on the central rod by a continuance of the downward motion. On the front of the beam there are three sets of these rods. Railway in 1838. The signal then used conteach one of them carrying a carefully adjusted set of weights, to in number. When all of one set are upon the beam they are the rest the work of the content of the property of the content o



Emery Testing Machines. - Fig. 5. - The Base Frame and Abutments.

the weights until the limit of capacity is reached. The weights are arranged to add

set is added, and so on, gradually increasing | mere danger and safety signal. In the same year Sir John Hawkshaw designed a disk signal attached to movable rails for the reached. The weights are arranged to add tens, hundreds and thousands of pounds to the balancing load. At the outward end of the beam, however, it is desirable to put on still greater weights, and Fig. 3 shows how these large weights are arranged. As in the previous case, there are 10 of them, but they are carried by two sets of rods fastened to the cross-head C. The rod D has arms projecting from it. One pair of these arms is shown at its bottom just below the weights i and k. By the lowering of A B, the weights i and k. By the lowering of A B, the weights i are lifted from until all are carried by D. When the cross-head C is raised the weights are lifted from D in a reverse order. In the front of the

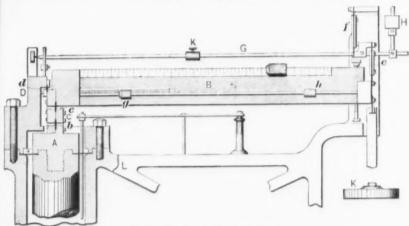


Fig. 6.—Beam for Platform Scale

case which covers the beam four handles are | semaphore in motion, and, at the same time,

so as to bring the pointers at zero.

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case which covers the beam four handles are seen. These handles, by motion up and down, move, by means of levers, the weights. At the same time they raise or lower a series of pointers, and thus indicate just how many weights have been placed on the beam. In starting to weigh, all the handles are moved so as to bring the pointers at zero.

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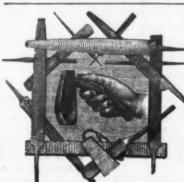
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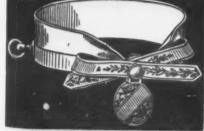
BRADE'S Crown, Planters and Hilling.

ELWELL'S weeding, Planters' and Grub, and a variety of other kinds for Home and Export Trade.

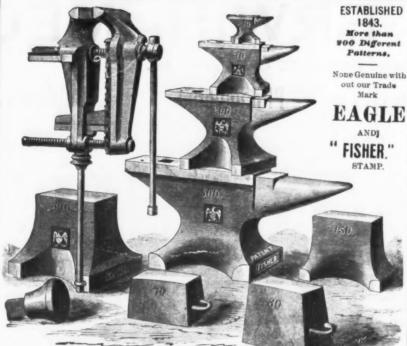
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For Sale by all Stationers THE ESTERBROOK STEEL PEN CO., Works, Camden, N J. 26 John St., New York DOG COLLARS AND FURNISHINGS.



MEDFORD FANCY COODS CO.



WARRANTED BETTER THAN THE BEST ENGLISH ANVIL! Face in one piece of BEST TOOL CAST STEEL, PERFECTLY WELDED, perfectly true, bardest temper and never to come off or "settle." Horn of tough untempered steel, never to break bend. Only Anvil made in United States fully warranted as above.

FISHER DOUBLE-SCREW VISE IS THE MOST PERFECT NOVELTY OUT.

Simple, Inexpensive, Accurate. Is fully WARRANTED STRONGER THAN ANY OTHER LEG VISE, AND ALWAYS PARALLEL. Is the best Vise for Machine Shops and Blacksmiths, and for all heavy work. ACCURATE AND DURABLE. Send for Circular.

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No. 24 Columbia Street, New York. Maker and Patentee of the improved **Hydraulic Jacks** Punches. Roller Tube Expanders and Direct Acting Steam Hammers Communications by letter will receive prompt attention. Jacks for pressing on Car Wheels or Crank Pins made to order.

BRASS AND COPPER CO., PURE ELECTRIC WIRE.

For Magnets, Telegraphs, Telephones, &c.

Insulated on the bare wire with H. Splitdorf's patented Liquid Insulation, covered with cotton or silk.

All sizes of Bare and Covered Wire in Stock. The conductivity of every bundle tested and warranted,

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Are drawn from the Best Norway Iron Rods only. They are hot forged and cold-pointed, rendering them both tough and stiff, and are warranted

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By the use of improved machines we forge Fifty per cent. More Nails on a machine than any other company, and are thus enabled to sell them proportionately less than any other nail of equal quality. All nails branded ESSEX fully guaranteed. GENERAL AGENTS:

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Beams, Channels, Angles, Sheared and Universal Plates, Car Axles, &c. BRIDGE SPECIFICATIONS A SPECIALTY.

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HARDWARE,

Rim and Mortise Locks, Knobs and Escutcheons, Apple Parers, Registers, Bronze and Cast Butts. STATIONERS' HARDWARE, &c.,

READING HARDWARE CO., Reading, Pa.

The Completion of the Arlberg Tunnel.

The Arlberg Tunnel, which ranks only after the Mont Cenis and Mount St. Gothard tunnels among great engineering works of its class in Europe, was completed on the 14th ult. Its construction presented no extraor-dinary engineering difficulties. The construction of the stretch between Landeck and Bludenz has been much more difficult and costly. It is a mountain line from first to last. In the valley of Rosanna the gradient is 1 in 40. The road crosses the valley of Panznau on a viaduct of three arches, each having a span of 197 feet. The length of this stretch is 35 miles, and the total estimated cost 11,784,000 florins, or \$5,892,000.

At St. Antoine, 1721 feet above Landeck, is the beginning of the great tunnel which

has just been com-pleted. The work of boring began on the Austrian side in June, 1880, and in September operations were begun on the Swiss side of the mountain. The work proceeded at a speed which affords a striking il-lustration of the improvements that have lately been effected in the art of mountain tunneling. The Mont Cenis Tunnel was bored at the rate

of 3637 feet a year, the St. Gothard at the rate of 5474 feet, and the Arlberg was pierced at the rate of 5474 feet, and the Arlberg was pierced at the rate of 7080 feet a year. The Arlberg engineers also profited by the experiences of their prede-cessors in the matter of cost, for while the outlay on the Mont Cenis Tunnel was \$2000 outlay on the Mont Cenis Tunnel was \$2000 per running meter (39½ inches), and on the St. Gothard \$1250, the expense of making the Arlberg did not exceed \$750 the meter. In this regard, however, the tunnel last named benefited by its shortness, since the longer the tunnel, other things being equal, the greater is its relative cost. the greater is its relative cost.

An interesting experiment was made in the Arlberg Tunnel with a new sort of perforator. The perforators used in the Mont Cenis and St. Gothard tunnels consisted of a Chicago. series of chisels (not diamond-pointed, as has sometimes been stated, driven with a quick, hammer-like action by compressed air, the machines for the production of which were actuated by turbines at the two ends of the illustrations show three applications of this galleries. This system was the one in use on the eastern, or Austrian, side of the Arlberg. in the form of a bracket, and the third rest-

each from 11/2 to 2 m. deep. These are ing the boxes the use of which permits put-then filled with dynamite and the mine exploded. Every blast lengthens the drift by about 11/4 m. The perforators move for-ward on wheels, and the air, compressed to a pressure of five atmospheres, is supplied through flexible tubes. On the west side drills are employed of a diameter of 70 mm., 2% inches, to which, by means of a water pressure of from 60 to 100 atmospheres, a rotary movement is communicated. Six or eight of these drills are as effective as 20 or 25 of the atmospheric ones, and the holes they make are so much wider that equal results are pro-duced with lighter charges of dynamite.

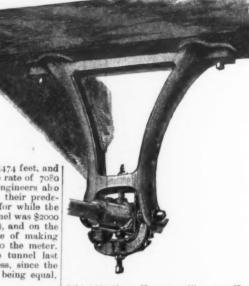
The greatest difficulty in Alpine tunneling consists less in quarrying out a passage than in getting rid of rubbish. After every blast the loose material must be removed before bor-

must be removed before boring operations can be resumed, and when an atmosphere already close and impure is still further fouled by the smoke of an explosion, the labor of removal becomes dangerous, as well as difficult. The important part which the removal of rubbish plays in these undertakings is shown in the fact that of the time required for the making of the Arlberg Tunnel fully one half was devoted to the carryrequired for the making of the Arlberg Tunnel fully one-half was devoted to the carrying away of loose material. It must, however, be a long time before this tunnel can be utilized for traffic purposes, for, even socket bearings are rough, unfinished cast-

seen a large augmentation in the tonnage, seen a large augmentation in the tonnage, with the one striking exception of 1877, when there were only 5627 tons, against 21,346 in 1876. In the following year, however, the increase continued, the tonnage reaching 26,960, and in 1882 it was 40,097. Even this latter figure, the highest of any previously recorded year, will be largely surpassed this year, as, during the six months ending June 20 less, 51 iron and steal years largely assessed. ending June 30 last, 51 iron and steel vessels had been built, having an aggregate of 55,079 tons.

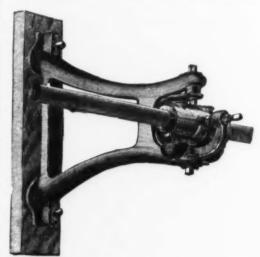
Self-Adjusting Hanger.

The accompanying engravings represent the Universal shafting hanger, manufac-tured by Messrs. Durkee & Keffer, pro-prietors of the Chicago Shafting and Pulley Works, corner Clinton and Monroe streets,



Self-Adjusting Hanger. - Fig. 1. - Hanger Arranged to Use Against Ceiling.

The design of the inventor in the position of this hanger has been to devise such a form that the general features of construction might be incorporated in the hang-ers adapted for use in various positions. Our The chisels cover a space of 7 sq. ing upon the floor. The special feature of m., and make 20 to 25 holes at one time, the hanger is the use of an open yoke carry-



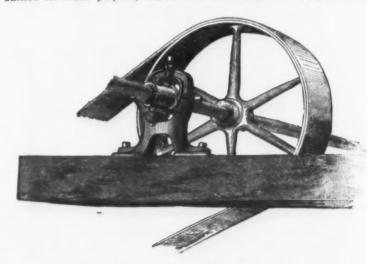


Fig. 3 -Floor Support for Shafting.

after the main task is completed, the approaches have still to be made, and a hundred difficulties overcome, such as those which interfered with the utilization of the St. Gothard. Once completed, however, it will afford a quick route from Switzerland after the main task is completed, the approaches the hoxes in the hangers berein illustrated are pivoted on small machine-fluished points, so arranged that very little strain comes directly on them. The oil chamber is provided in the bottom of the will afford a quick route from Switzerland and France to the western provinces of hangers are superior in peaches.

and France to the western provinces of Austria.

hangers are superior in neatness and convenience and have maximum strength. The Recently published statistics reveal the fact that the building of iron and steel ships is largely and steadily on the increase in the United States. Since 1868, when the total tonnage of the new ships of this class was 2801, to the present time every year has

RUSSELL & ERWIN MFG. CO.,

MANUFACTURERS

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ALL SIZES

Every Kind

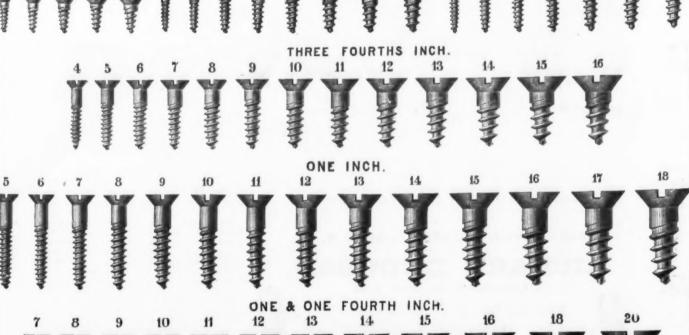
FROM

1 in., No. 0,

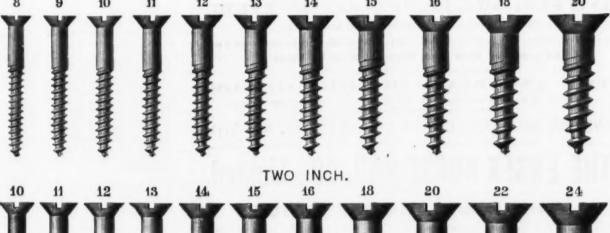
TO

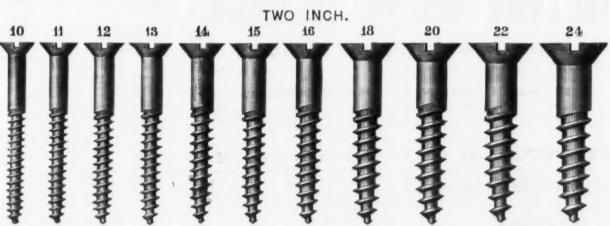
6 in., No. 30.

Prompt Shipments.











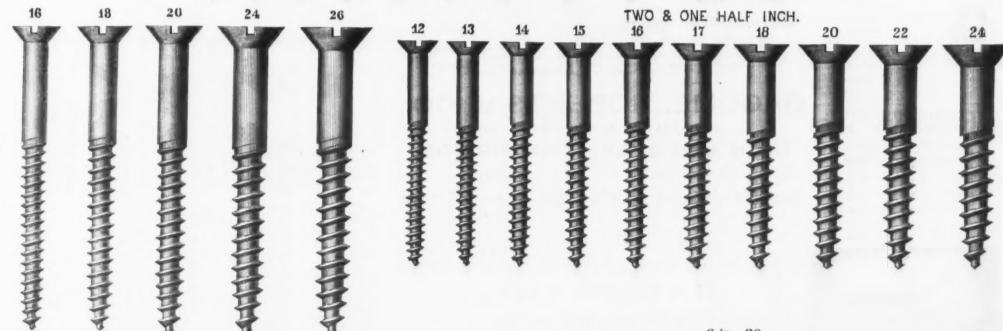
- " Brass,
- " Nickel-Plated,
- " Electro-Plated
- " Bronze,
- " Tinned,
- 11 11 1----
- " " Japanned,
 Oval " Iron,
- " " Brass,
- " " Bronzed,
- Round " Iron.
- ound " Iron,
- " Brass,
- " Nickel-Plated,
- " Electro-Plated
- " Bronzed,
 " Tinned,
- ' '' Japanned,

Piano Head Bright,

- " Polished,
- " Nickel-Plated,

Felloe Screws,

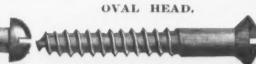
Coach Screws.



ROUND HEAD.



THREE & ONE HALF INCH.





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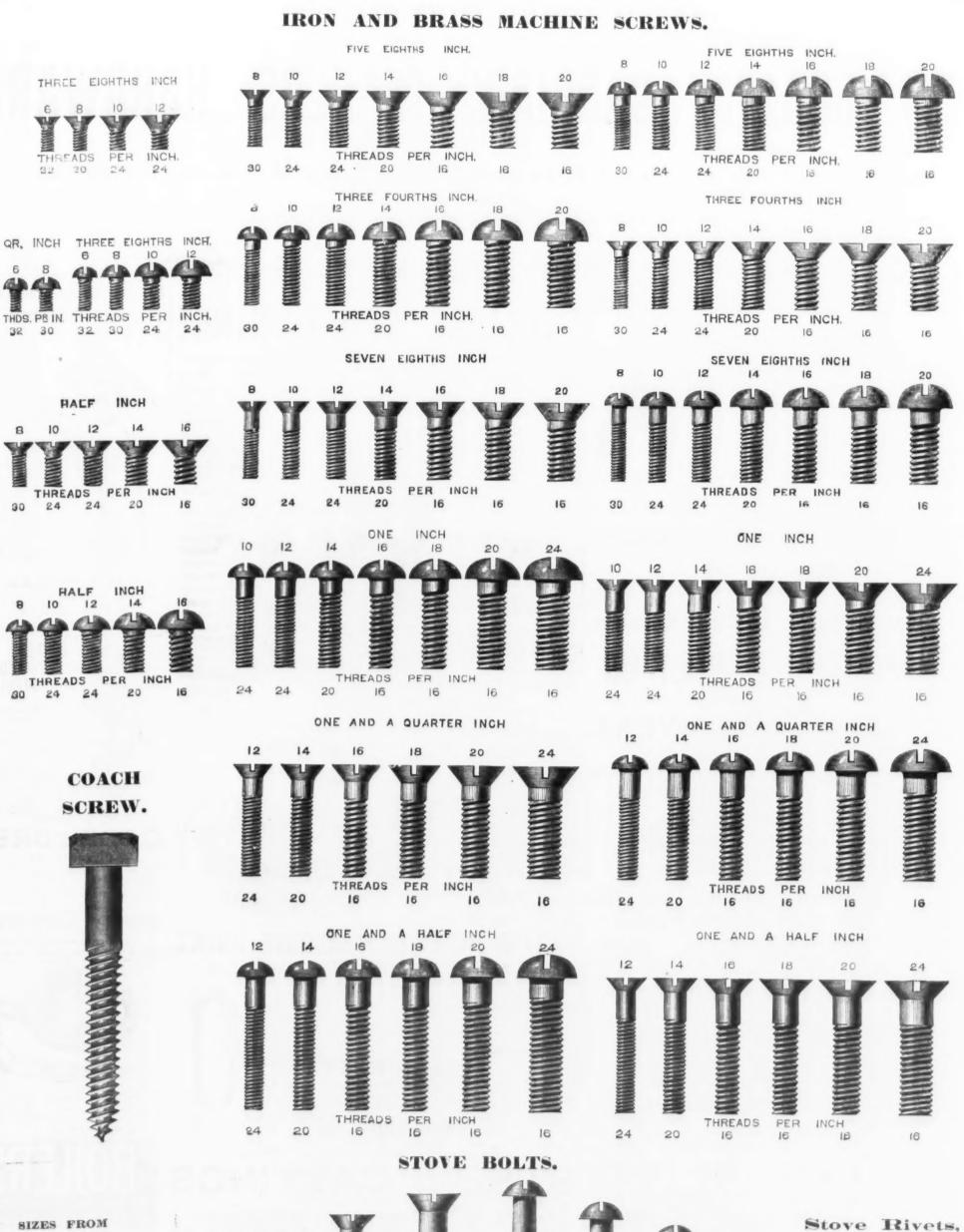
New Britain, Connecticut.

New York.

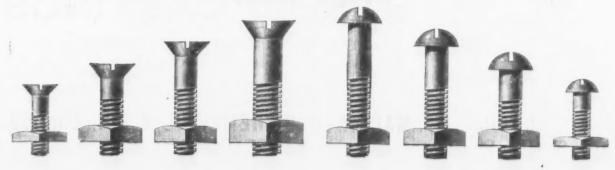
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5-32 in. x 1-2 in. TO 3-8 in. x 7 in.



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Sink Bolts,
Tire Bolts, &c.

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BEST QUALITY CARRIAGE MAKERS' HARDWARE,

Manufacture the Largest Variety of Forge Carriage Irons, of Best Material and Workmanship.

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NOTHING TO TAKE OFF WHEN ENTERING THE HOUSE.

Not in Use. The Only Perfect Reversible Ice Creeper. Unparalleled Success Wherever Sold.

SOLID CAST STEEL

STEEL PINS Each Kind are Packed Sample pair of either by mail upon receipt of 60 cts

CREEPER.

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SCOTT MANUFACTURING CO., Sole Patentees and Manufacturers,

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THIMBLE SKEINS, BLACKSMITHS' TOOLS, JACK SCREWS, SAD IRONS, COPYING PRESSES and STANDS, &c.

Eureka Patent Shear

For Cutting Round and Flat Bar Iron and Sheet Metal. MADE ENTIRELY OF CAST STEEL. Cheapest and best tool for the purpose ever put on the market.

No. 1 will cut up to 1/4-in. Flat and 1/4-in. Round.



Furnace. Henderson's Patent Realizes Perfect Utilization of Coal as Fuel, PRODUCES INGOT IRON FREE OF CARBON and INGOT STEEL OF ALL GRADES OF CARBON.

From every kind of Pig Iron or Pig and Wrought Scrap Iron. Apply to JAMES HENDERSON,

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Has more good features than any other. Hinge part strong as a common butt. Loose wrought-iron pin. Knuckles milled and drilled. Exerts greatest force when door is shut. When opened somewhat past the cen-

ter, holds the door open. This last is much to be desired. Extra heavy spring. Cannot be injured by opening door far back. Hinge and Spring can be used on medium size doors

as well as screen doors. Send for sample.

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SPRING BUTTS

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Lamps & Oilers. NO BREAK. NO LEAK. CAST IN ONE PIECE.

NO SEAMS. Get New Discount. PAINE, DIEHL & CO.,

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200,000 Sold in Two Years.

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DRAWER AND WINDOW KNOBS, SCREW KNOBS,

TOWEL RACKS, &c.

March 26, 1872, July 27, 1880. -anamatana

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Being desirous of securing a share of public patronage, we will endeavor to make our product equal in quality to any in the market.

MACKINTOSH, HEMPHILL & CO., Limited, PITTSBURGH, PA.

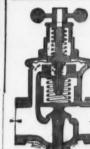
The Common Sense Sash Holder and Lock Combined.



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Plymouth, Mass.,

Manufacturers of Copper, Brass and Iron Common and Swedes Iron, Leathered, Carp and Girop Tacks; Finishing, Hungarian, and Girop Tacks; Finishing, Hungarian, Trunk, Clout and Cigar Box Nails, &c. Rivets made to

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ROMER & CO., Manufacturers of Patent Jali Padlocks, Brass and Iron Padlocks, Carriage Lamps and Lanterns, 28 to 42 Summer Avenue, Newark, N. J. Illustrated catalogues sent to the trade on application.







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MINES, COKE OVENS AND WATER WORKS.

Chain Pump Tube, Curbs, &c.

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Fine Bronze Trimmings.



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IRON AND BRASS Gimlet-Pointed Wood Screws. WRITE FOR DISCOUNTS.

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RUBBER BELTING and PACKING.

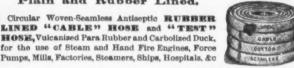
Steam Packing, Leading Hose, Suction Hose Grain Elevators Steam Hose, Piston Rod Packing, Gaskets and Rings,



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Emery Wheels and Packing. ORIGINAL



Solid Vulcanite EMERY WHEELS

Wheels are such that they can be used with great advantage and economy finishing Wrought and Cast fron. Chilled Iron, Hardened Steel, Slate, Marbeare extensively used by manufacturers of Hardware, Cutlery, Edge Tools Arms, Wagon Springs, Axles, Skates, Agricultural Implements, and small description.

PATENT ELASTIC Rubber Back Square Packing,

BEST IN THE WORLD.

For Packing the Piston Reds & Valve Stems of Steam Engines & Pumps.

B represents that part of the packing which, when in use, is in contact with the piston rod.

A the elastic back which keeps the part B against the rod with sufficient pressure to be steam tight, in the piston rod.

This Packing is made in lengths of about 20 feet, and of all sizes from 14 to 2 inches square.

Corrugated Rubber Mats and Matting, Pat. 11,208, 213,601



For Halls, Flooring, Stone and Iron Stairways, &c. This practical and indispensable arti-cle—especially for wear where exposed to ice, snow or slush—was first intro-duced by this company several years ago, and its real value is in being almost indestructible, when proper materials are used in its manufacture, whilst the cheap, public by reckless imitators of our patent



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The most complete assortment in the U. S. of Shank, Socket Firmer and Socket Framing Chisels,

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BEARINGS, SLIDE VALVES, CYLINDER RINGS, CROSS-HEAD GIBBS, STEPS, BUSHINGS,

And all purposes where Maximum Durability, Anti-Frictional and Non-Cutting Qualities are Desirable.



PUMP RODS, BOLTS & NUTS, MIIII MACHINE and WOOD SCREWS, &c., &c.

Combine Toughness, Strength, Durability and Resistance to Corrosion,



CASTINGS OF ALL KINDS TO ORDER. SEND FOR PAMPHLET AND PRICES.

THE PHOSPHOR-BRONZE SMELTING CO., LIMITED,

No. 512 Arch St., PHILADELPHIA, PA. Owners of the U. S. Phosphor-Bronze Patents. Sole Manufacturers of Phosphor-Bronze in the United States.

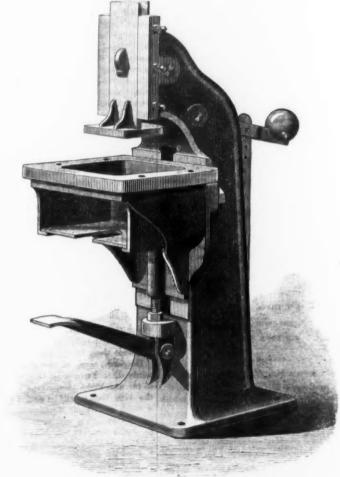
A New Lever Press.

Our engraving represents a new pattern of lever press, built by E. W. Bliss, Plymouth, Pearl and John streets, Brooklyn, N. Y. A full line of sizes of this style of press is being put on the market. The largest will have an opening in its bed of 16 by 22 inches. As will be seen by a glance at the cut, the design is a very radical departure in style of framing and bed from anything that Mr. Bliss has yet turned out. First and foremost to be noticed is the adjustable bed, which moves up and down in guides on the which moves up and down in guides on the front of the bed-plate, and is adjusted and held in any position by a heavy screw. This feature fits the press to receive dies of greatly varying hight, and at the same time enables a most of the press to be made. An intermediate lever between the mandrel lever and the treadle connection is introduced, which is connected with the mandrel by a toggle connected with the mandrel by a toggle joint. This joint straightens at the end of the stroke, and the maximum power is exerted at the moment when the dies come together. Beneath the bed there is a slide plate for catching the blanks which pass through the dies, a feature which will be appreciated by a large number of manufacture.

to over \$214,000,000. Our exports have increased under our protective system, and our farming implements, cars, carriages, carts, edge-tools, cut'ery goods and even glass are being shipped abroad. And the rate of money has also gone down, as you know, and that is a subject that enters into

business of all kinds.

Now such is the American system of protection. Under its stimulating impulse our progress since 1861 has been without an example either in modern or ancient history, until our nat on to day, in wealth, power and civilization, stands the first among the nations of the world. (Applause.) I hold that Governments are formed not only to protect persons and property, but to render the people prosperous and happy, and that Government which by its laws comes nearest to attaining these ends comes nearest to accomplishing he purposes as d objects of its foundation. I claim that my Government has accomplished that thing.



New Lever Press

I hold that the Government is but a large family, and that many of the rules that govern the family are applicable to the Government. The more people you have employed in wage-earning in your families, the more prosperous you are. We had 50,000,000 people when the last census was taken, and less than 18,000,000 were engaged in active employment—people over 10 years of age—and of these. 7,600,000 were engaged in agriculture; but these raised enough to feed the whole 50,000,000 in this country, and there was a sufficient surplus to supply all the wants of Europe. Four millions are engaged now in manufactures. What would be the condition if England the surplus down our protect. should succeed in breaking down our protective system. What would the 4,000,000 people do? Do not understand me to say that if you repeal the tariff it would destroy every manufactory in the country. There are very strong ones that would exist, but there are hundreds that would go down. Even as a result of the repeal of duties last winter there are among iron men more than

winter there are among iron men more than 20,000 people thrown out of labor. The protective tariff was passed in 1861. Our commerce that year was a little over \$508,-000,000. Last year it was \$1,547,000,-000. In 1860 our manufacturing products amounted to \$1,185,000,000. In 1880 they had risen to \$5,369,000,000. Last year we imported of manufactured products a little over \$479,000,000. Therefore, of manufactured products used in this country to day we are making over 92 per cent., and we are importing of manufactured products from abroad less than 8 per cent. abroad less than 8 per cent.

Not many decades ago the thing was reversed. Of the manufactured goods used in this country there were not more than 10 per cent. made here, and more than 90 per

cent. came from Europe. Now over 92 per cent. are made here, and less than 8 per cent. are brought from Europe. That is what protection has done. (Great applause.) Nor has it increased the price, for nearly Nor has it increased the price, for hearly every manufactured article to-day is less than it was in 1860. (Applause.) In 1860 you could not get steel rails for less than \$130 per ton. I have known of contracts made this year at \$37 per ton. Furniture is 20 per cent. less than in 1860. Stone and earthenware is 25 per cent. less. Cotton goods are 25 per cent. less; silk goods over 30 per cent. less; woolen carpets 12 per cent. less; woolen dry goods, 25 per cent. less; woolen dry goods, 25 per cent. less. The products of our foundries in 1860 were \$28,500,000. In 1880 they had rise 1

turers. As compared with other presses of the same power and capacity, it will be seen that it occupies considerably less space. The frame is very stiff and strong.

What Protection has Accomplished.

Mr. Thos. H. Dudley, in his address in this city before the New York Association for the Protection of American Industry, said:

I hold that the Government is but a large family, and that many of the rules that govern the family are applicable to the Government. The more people you have employed in wage-earning in your families, the more prosperous you are. We had 50,000,000 people when the last census was ing—if, indeed, it be not more so—as that it occupies considerably less space. The rounded form of head. For obvious reasons no particularly exact or careful comparisons can be made of the results thus obtained with the experience of former years, for it is nearly or quite impossible that there should be any use of the two forms of head in particularly exact or careful comparisons can be made of the results thus obtained with the experience of former years, for it is nearly or quite impossible that there should be any use of the two forms of head. For obvious reasons no particularly exact or careful comparisons can be made of the results thus obtained with the experience of former years, for it is nearly or quite impossible that there should be any use of the two forms of head. For obvious reasons no particularly exact or careful comparisons can be made of the results thus obtained with the experience of former years, for it is nearly or quite impossible that there should be any use of the two forms of head.

I hold that the Government is but a large family, and that many of the rules that govern the family are applicable to the flower probably than any other kind of contact would be likely to be in wearing away the metal, so that the duty exacted or curves should be any use of the two forms of head under precisely similar circumstances. The rolling motion of the wheel flanges in passing curves, of the older rou every modification of the design or outline of the rail, and the results flowing from it, are of interest, especially as all, or nearly all, these results have been accomplished simply by making a more correct distribution of the metal, and not by mere random increase in weight, and hence in cost.

The action of the flange on the rail head of the older form was cumulative in two ways, one producing a favorable effect, viz., the gradual widening out of the side of the head, so that day by Jay it presented a wider flat surface to resist the flange wear. Hence, the amount of this flange wear continued. tinually decreased, although it continued persistently to reduce the width of the upper surface, and, indeed, it was by no means an unheard of thing that this width was cut down to two-thirds or even one-half of the original size. This loss of width led to a second contin-ually increasing result, viz., the more rapid wear of the top of the head under the passing wheels, and hence any remedy which would save the flange wear would promote the durability at the same time at the top. It is really worthy of note that the remedy for all this serious wear, although radical, was obtained by making a more rational and correct use of the material which, in amount and in cost, had long been used in the rail. but which had been put in the vertical web, and the base or flange of the rail, where, at an earlier day, it was supposed the material was needed.

The Iron Age

Metallurgical Review.

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What of the Future?

That there is a depression in the various branches of the iron trade admits of no doubt. Production, or the capacity for production, which at the beginning of the boom was below the demand in this country, has been increased to such a degree that it is now in excess of the present demand, which has in turn somewhat fallen off from the enormous volume it reached in 1880. We do not intend to say that the actual amount of iron of various kinds on hand made up to-day is in excess of the demands of the country. Indeed, the stock is exceedingly small; but with the changes which have come about in trade and methods of conducting business, especially such as have waters of the harbor a steamboat parade of they lead us to a just appreciation of the reduction of a mere revenue duty was not rown out of the increased rapidity of communication and movement of freights, it is not the actual stock on hand at a given time that affects the market so much as it is the capacity that is available to meet any demand that may arise. This is the condition to-day in all branches of the iron trade. The capacity to supply the demand is in excess of the demand of to-day, or any probable requirement of the immediate future, though we believe that in the not very distant future the demand of the country will grow up fully to the present capacity for supplying iron. The course before our iron and steel works is to wait patiently for that time.

But while this is true of the iron trade, it does not correctly represent the condition of many of the other industries of the country. Indeed, the general condition of business is not depressed. While there is an era of low prices, which is not to be regretted, there is nothing like the depression in the general business of the country, and in many of its chief industries, that there is in the iron trade. The crops of 1883 have been enormons We have had all we could consume or sell, and have had a good demand for all that we had to dispose of to foreign countries. Money has, within a few weeks, gone begging in the streets at 2 per cent, on call, of four vessels has for ten years been the We have had good crops, large earnings and sole representative of the United States in a heavy trade. Credits have been by no the merchant service between this country means largely extended, nor has the record and Great Britain. Even this diminutive of bankruptcy been a very large one in pro- domestic venture is on the point of being portion to the volume of business done. The suspended, as its Philadelphia owners are shibboleth, "American industry must go." report of our foreign trade, just issued by disgusted with its unprofitableness and are Viewed in the light of what Mr. Carlisle

merchandise have largely increased, being \$804,223,632 in 1883, as against \$733,239,732 during the preceding year, an increase of \$70,983,900, and this greatly increased exportation of domestic merchandise was due chiefly to the fact that the crops of the season of 1882 were generally much larger than those of the season of 1881, and, consequently, the quantity available for exportaion was larger. Another interesting item in connection with our exports for the fiscal The admission of foreign-built vessels to to carry out the purpose for which he was of the past twelvementh, its force will ulti year 1883 was the increase in the value of the exportation of the products of domestic coasting trade to foreign competition, would manufacture from the United States. amounting to \$111,890,001, as against \$103,-132,481 during the preceding year, and were larger than during any previous year in the history of the country. These facts certainly indicate a healthy condition of affairs in this country.

And yet, in the face of all this, there eems some distrust as to the future. There eems to be an indefinable dread of something going to happen, though what that something is there are no signs in the heavens to indicate. One element producing this distrust is, without doubt, the fact that we are on the eve of a Presidential election, which always unsettles the business of the country, and during which, as we have already indicated, legislation, which so largely affects the business interests of the country, is undertaken, not in view of the needs of that business interest, but of the needs, or supposed needs, of political parties. Another element of distrust, as we write, is the uncertainty as to what Congress will do with the tariff. Whatever may be one's views as to the advisability or necessity of tariff revision, no one can doubt but that an agitation of tariff changes inevitably unsettles business. One great element in the calculations of business men as to their future is the extent and strength of competition that they must meet. While the tariff remains fixed foreign competition is not so uncertain an element but that it can be reasonably estimated, but with changes, the amount of which may be uncertain, before them, it is well nigh impossible for even the shrewdest to decide their future course.

However, some of the elements of uncertainty that hang over the future will have so far developed themselves by the first of the year that it will be possible to arrive at a more intelligent decision as to what the outlook for 1884 will be. At the worst, we do not anticipate anything in the nature of a panic, as the country is too prosperous, on the whole, for that. On the other hand, it is possible that we may have a year of good business, though at low prices, and this is really the most probable outlook for 1884.

"Evacuation Day" Reflections.

Our readers are aware that on Monday of last week New York City celebrated the one hundredth anniversary of the evacuation of the city by the British troops at the close of the Revolutionary War. The programme for the celebration was very ambitious, but in spite of unfavorable weather it was faithfully and enthusiastically carried out. A bronze monument of Washington was unveiled on the steps of the Sub-Treasury Building in Wall street, on the very site on which that immortal patriot stood when he took the oath of office as the first President of the United States, and an oration by George William Curtis graced the occasion. An imposing civil and military procession moved through the streets of the city, typical of the entrance of the Continental the largest liberality, and we shall find our army a hundred years before, and on the extraordinary proportions exemplified the naval movements of the day when the British flag as an emblem of authority floated over this city for the last time. A significant cartoon, based upon the Evacuation Day ceremonies, appeared in one of our illustrated papers on the day following. The British ships are represented sailing away in 1783, with a Continental clenched fist shaken at them, but in 1883 is depicted "the daily evacuation of the flag that never lost its grip," the departure of Transatlantic British steamers, with fair hands waving fond farewell after them. The carrying-trade flag is still the Cross of St. Andrew's, the emblem of British supremacy on the seas.

We have achieved political independence and for over a hundred years this country has controlled its own destiny. We have secured almost complete industrial independence, and the signs of the times are in favor of total emancipation before many years. Commercially, however, we are most help lessly dependent on foreign countries. Ever year we send abroad over \$800,000,000 worth of our products, and we import almost as much from other countries, yet "the flag we fought for " is seldom seen at the masthead of a Transatlantic steamship. A line

the fiscal year ending June 30, 1883, was the West Indian, Central and South Ameri- When congratulated on the caucus nomination \$723,180,914, against \$724,639,574 during the preceding fiscal year, showing a falling Steamship Company, cover all the other liste said: "No, don't congratulate me. This off of \$1,458,660. The excess of our ex- steam marine enterprises of the United ports of gold and silver over the imports has States with foreign countries. The harbor fallen from \$6,945,089 during the fiscal year of New York, as well as of every other 1882 to \$3,330,942 during the fiscal year American seaport, is alive with ships carry-1883. On the other hand, our exports of ing foreign flags, the American flag being degree was the free-trade principle, and conspicuously absent from almost everything but coasters.

This is an oft-told tale, but it needs to be repeated more and more frequently, until the people of the United States, through their chosen representatives, make a serious tion, we cannot feel at all sure that he will effort to change this humiliating condition of not later proclaim his allegiance to it. It affairs. There is a cry on one side for "free ships" and the repeal of the navigation laws. But that seems to be only a leap in the dark. American registry, and the opening of the chosen, it will not be because he does not accelerate the decadence of American ship- he is afraid to attempt the undoing of what ping interests by abandoning to foreigners the protective tariff of the past 20 years the only considerable trade now controlled has accomplished, on the eve of a Presiden-by home-built and American-owned vessels. by home-built and American-owned vessels. Foreign ships would be only too glad of the chance to turn an honest half-penny by coming over here to carry freight from Boston to New York or New York to Philadelphia, or from Northern ports to Southern or Pacific ports, whenever the carrying trade dustries deem it expedient to wait until they vas dull in other parts of the world. If free ships" would prove attractive inestments for American capital, there would be no guarantee that they would be able to compete for freight after our people had represents the brief triumph of a dangerous purchased them. The experience of France is a timely warning. Her people have bought ships in other countries to such an extent that the shipbuilding industry of if it does not accomplish, its destruction. Great Britain and Germany has of late been wondrously stimulated, and now those ships lack employment, and are to be found idly at anchor in every French port. It is one thing to own a ship, but it is something

vastly different to secure it employment. As our foreign commerce is so enormous and as we ought to have a share of the business of carrying the tremendous tonnage of freight involved, the question is one of paramount interest. It should be considered from its foundation up. In the first place, we should build all our own vessels. spirit of national economy forbids the payment to fereign countries of the vast sums which a steam merchant marine would cost. In the second place, the vessels should be built of American materials, as everything needed can be obtained in this country. The depressed condition of our industries should dustry, seemed to be a direct effort to procure entitle them to receive the benefit of such a great demand as would flow from the building of a large number of steam-In order to induce capital to invest in shipping, the business of freighting must be made remunerative. This can be done in several ways. American ships can be relieved from all taxation, all lighthouse fees, harbor charges and even pilot fees, while foreign vessels can be compelled to pay all the dues referred to, which can be made sufficiently heavy to become an important influence in favor of American vessels. It is alleged that such a regulation even now obtains in Great Britain to some extent and handicaps foreign vessels attempting to trade there. Again, differential duties can be so adjusted by Congress as to secure to goods brought in American bottoms a more favorable rate than those brought here in foreign bottoms. This plan has recently been proposed by Governor Butler, and meets with much favor in many quarters. Some such expedient would undoubtedly meet with more hearty popular support than would the payment of subsidies or bounties, to which the West and South would probably oppose objection under the mistaken notion that only the seaboard States are more hopeful of ultimate success than would be benefited. But whatever the means, the end in view is great enough to justify Evacuation Day reflections most profitable if duced instead of being advanced, but the importance of developing our shipping in terests.

The Speakership.

The election of Mr. Carlisle to the Speaker ship of the House of Representatives has given rise to a feeling of uneasiness in business circles, which, under the circumstances, is not to be wondered at. Mr. Carlisle has throughout the country, and opened the evidently felt under the necessity of saying something reassuring, and his address, on assuming the duties of his office, has been widely quoted as indicating that the House, under his leadership, will adopt a conserva. tive policy. He said

Sudden and radical changes in the laws and regu ations affecting the commercial and industrial in-erests of the people ought never to be made unless operatively demanded by some public emer gency; and, in my opinion, under existing circumstances, such changes would not be favorably received by any considerable number of those who ave given serious attention to the subject. Many ns are undoubtedly necessary, and it will be duty, after a careful examination of the subject in all its bearings, to decide how far hey should extend, and when and in what manner should be made. If there be any who fear your action on this or any other subject will ally be injurious to any interest, or even afford mable cause for alarm. I am quite sure that they will be agreeably disappointed.

This is all very well, but it is susceptible of several interpretations, any one of which would be satisfactory to those whose eco nomic creed might be summarized in the

fight was made upon a principle. Be glad because the principle has prevailed; I only 'represent it." Now the only principle which Mr. Carlisle represented in a conspicuous while it is gratifiying to know that the pressure of official responsibility has caused him to utter words in his address to the House which seem to promise an abandonment of the principle" which triumphed in his elecwas a fair issue between the enemies and the friends of domestic industry, and the enemies won it. If Mr. Carlisle does not attempt want to, but because as a shrewd politician représents has very little chance of receiving the popular indorsement. If kept in the background during the session of Congress just begun, it will be because those who are ready to thrust a knife into our national incan do so with less certainty of swift retribution. We counsel the friends of American industry not to be misled by Mr. Carlisle's reassuring words. His election principle, and those who rest in fancied security may be rudely awakened by a shock to our industrial system which will threaten,

The Agitation for Higher Tin-Plate Duties.

The movement in favor of higher duties on tin plates is increasing in strength. Not long ago the question was very imperfectly understood, and the agitation was confined to a few persons who could be counted on the fingers of one hand. They were all interested in small sheet-iron establishments in Western Pennsylvania, which had erected tinning apparatus in the hope that they might be able to compete with foreign works in the manufacture of tin and terne plates. The attempt of such a small number of persons to induce Congress to impose a high duty on an article of almost universal consumption, for the benefit of an unborn inspecial benefits in the way of trade, and therefore, not only in Congress, but out of it, and among manufacturers, as well as the general public, the promoters of the scheme were met with open hostility or chilling indifference. Manufacturers' association said in effect to the would-be American tin-plate makers: "We recognize your right to protection to be as well-founded as our own, but you have no great amount of money invested in your under takings, and not many people are interested in what you propose to do, and, as we deprecate tariff agitation, we think you had better not stir up the question just now." And if the great manufacturers associations had had their way, the tin-plate agitators would have been forever quieted, because the time would never have come, in the opinion of such organizations, when it would have been safe to reopen the discussion of iron and steel duties. But the handful of enthusiasts kept right on, hard at work, hammering in every direction, and doing missionary work among their brother manufacturers, as well as among tin-plate consumers, and the consequence is that today their cause is well supported, and they they ever were. Their efforts were defeated last winter, it

is true, and the duty on tin plates was reregarded as involving any principle, and therefore, was looked upon as wholly insignificant. The old duty was too low to permit the investment of capital in American tin-plate works, and, therefore, was not worth fighting for. But the discussion before the Tariff Commission, the Congressional committees and the House and Senate brought this question into prominence eyes of many people to its vast importance. Manufacturers of galvanized iron at that time realized thoroughly the dangerous position they were in, when consumers of their products urged a reduction of the duties on similar foreign products, so as to bring the cost of galvanized iron more on an equality with that of tin plates. Makers of black sheet iron naturally sympathized product was thus placed in jeopardy. Manufacturers of raw materials could not then shut their eyes to the situation, and iron-ore and coal miners were roused. Since the passage of the tariff act, last March, the feeling toward the tin-plate duty has not weakened, but the growing depression in trade has, on the contrary, greatly widened and strengthconverted into tin plates, if such a branch of Our total imports of merchandise during pose of their vessels. A few steamships in assuring as some people affect to consider it, product to be put into terms plates. Even thing to be said about these reductions, how-

consumers of tin plates are manifesting the good effects of the educational influences accompanying the high-duty agitation, and there will in the future be no fear of a solid phalanx of consumers opposing, through their Members of Congress, an effort to make the tin-plate duty high enough to encourage the domestic manufacture. We know of no industrial question that has been so persist ently fought for, in season and out of season, against such fearful odds and under such discouraging circumstances, as the duty on tin plates. Success may not this winter crown the efforts of the friends of an American tin plate industry, and circumstances may defer the realization of their hopes for several years, but if their movement continues to gather strength with the momentum mately prove itself irresistible.

Our Foreign Metal Trade.

In another part of this issue we present in considerable detail, the statistics of imports and exports of iron, steel, other metals and coal into and from the United States during the month and nine months ended September 30, 1883, as compared with the corresponding periods of 1882. These figures are taken from a recently-issued statement by Hon. Joseph Nimmo, Chief of the Bureau of Statistics. Although they are not as fresh as we would like to have them, they are valuable, because they show the entire volume of our foreign coal and metal trade in the first nine months of the current year, and thus convey a correct impression of the present tendency of these branches of business. They possess special value in the new arrangement which has been adopted by the Bureau of Statistics, the items for September being given in greater detail than has hith erto been the case. Iron ore appears in this statement, scrap steel is separately classified, cotton ties are given by themselves, steel is divided into several classes, wire rods form a separate heading, &c. In these respects the present form of the monthly statement of imports and exports is a great improvement over the old one, in which a few general terms were employed to cover the whole range of iron and steel manufactures. It will take some time before the full advantages of the change can be realized, as detailed comparisons for previous periods are evidently not accessible. This will appear more plainly upon examination of the tables. We present below a synopsis of the values of the metal imports for the periods covered in the exhibit referred to, the total tonnage of the imports not being procurable:

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G	Septe	mber.	Nine A	fonths.
Commodities.	1883.	1882.	1888.	1882.
Brass	\$42,347 37,296 10,574	\$65,284 49,648 27,887	\$873,258 810,089 66,725	\$551,893 420,678 167,290
sitions Iron ore Iron and steel	245,952 118,727	218,369 235,580 5,192,216	1,764,822 1,020,773 28,511,404	
Tin plates Crude tin Zinc	1,596,844 592,490 12,387	1,329,726 548,640 87,934	18,845,306 4,692,356 889,240	8,712,276
Mineral sub- stances	4,027	667	71,224	85,815
Total8	4,856,092	7,755,894	45,995,147	61,908,439

It will be seen that the total value of the metal imports has fallen off 25 per cent. in the nine months under review. The details for the month as well as for the nine months are worthy of critical examination. In the table below we have combined the values of both domestic and foreign exports so as to present the complete volume of the metal export trade in one exhibit :

Brass \$22,642 \$14.898 \$183,861 \$		Septe	mber.	Nine months.			
Copper 497,182 85,846 5,520,484 Iron & steel 1,969,188 2,101,607 17,586,809 17, Lead 7,057 3,449 50,151 50,151 Metal compositions 2,802 2,589 35,666 19,088 Crude tin 10,088 19,088 19,088 19,088 19,088	ommodities.	1883.	1882.	1888.	1882.		
Lead 7,057 3,449 30,151 Metal compositions 2,902 2,589 35,666 Crude tin 19,088	opper	497,182	85,846	8,520,484	\$172,588 786,670		
sitions 2,902 2,589 35,666 Crude tin 19,088	ead	1,959,188 7,057			17,582,895 54,826		
	sitions	2,902	2,589		19,837 56,179		
tures 14,077 18,057 160,617	tures				162,777 108,209		

Total . . . \$ 2,505,859 2,311,776 21,569,080 18,887,981 This statement shows that our exports of metals have increased considerably. The movement of copper has especially swollen, and the increased value of the exports is almost wholly due to it.

A general reduction in wages in each branch of the iron trade in which, under the existing agreements, they can be reduced, seems to be in progress all over the country. The steel-workers' agreement expires on the 1st of January, when there will no doubt be a reduction, the extent of which is now in course of discussion between the manufacturers and operatives. In the Western iron trade the classes of labor that are governed with the galvanized-iron makers, as their by the scale of wages agreed upon between the Amalgamated Association and the Manufacturers' Association will not be disturbed until the 1st of June, though the consideration of the new scale, and the discussions as to the reduction, if any, that will be con ceded, will begin in February or March. The wages of other classes of labor, how ever, are already being reduced, the reduction being generally 10 per cent. In the ened it. The makers of steel need East, under the existing scale, wages can be other avenues of consumption, and they reduced on the sliding basis until the quoted would gladly sell steel billets or plates to be price of iron is 2 cents a pound, and this limit, we believe, is very nearly reached, if business could be established here. The not quite. Outside of the classes governed smelters of lead both in the South and by this scale reductions are taking place as West would be glad to have an opportunity they are in the West, the amount of reduction the Bureau of Statistics, is quite satisfactory, considering the best plan by which to dis- said only two days before, it is not so re- to furnish a great part of their surplus being generally 10 per cent. There is one

ever, and that is that while they are not pleasant to contemplate, the reduction in wages comes long after the reduction in profits.

"Laissez Faire."

Laissez faire, with many of the other idols" of the Manchester school of political conomists, is fast losing the reverence of its old votaries. An English economist re-cently declared that "it has become a byword. Liberals speak of it with scorn; to avow any belief in it is to be an old fogy or a Whig of an antediluvian species. England has experienced altogether too much benefit from legislation that has been an entire ignoring of the laissez-faire principle to any longer adhere to it, and she could not, if she would, return to the old doctrine of non-intervention by law in industrial mat-All of the great body of law that is on the English statute books looking to the improvement in the condition and safety of the laboring population of that country is directly opposed to the laissezfaire principle, and has been from the first objected to by those who were its disci-Professor Fawcett, for example, has from the first opposed the legislation that made it illegal to employ women in the mines and limited the age at which children could be so employed. Indeed, about the only important industrial legislation, or refusal to legislate, that recognizes the laissez-faire principle to-day in England is legislation on protection, and in this laissez-faire is still he shibboleth. But the same arguments that have resulted in the abandonment of this principle in legislation where life, health and morals of the labor population were concerned, must inevitably and logically result in its abandonment in connection with protection. Conceded that the State may interfere with the industrial freedom of its citizens, then the extent to which that interference may be carried must be decided from time to time in accordance with what the legislators of that time conceive to be for the best interests of the State, and this is all that the protectionists have ever claimed.

The Condition of Trade.

Although the past week was a broken one, owing to the general observance of Thanksgiving Day, there was a fair amount of business transacted in most branches of the iron and steel trades. The movement of pig iron was better than had been anticipated, as canal navigation has closed for the season. The demand is mainly of a retail character, but as buyers are urgent for very prompt deliveries, sellers feel confident that it will continue, although no large volume of trade is expected for the next two months. If prices can be sustained until spring trade opens, and of that there is little doubt unless stocks again accumulate rapidly, manufacturers look for greatly improved trade. Much will depend upon Congressional legislation, however, it being unfortunately possible for Congress to completely demoralize

Steel rails have displayed some animation in the past week, very large sales having been made in the West, and some of the Pennsylvania companies having secured considerable business for next year. No more sales have been made at the figures which recently prevailed at Chicago, the Pennsylvania companies holding stiffly to \$35 at mill, and the Chicago companies refusing to sell below \$37. The belief is growing that steel rails have touched bottom, and that the railroads which have purchased at or below \$35 have secured bargains. Some Pennsylvania companies are even now asking \$35.50 for next fall deliveries. The leading companies will shortly have their capacity engaged for next spring and summer, and will be in a position to demand higher prices. The comng winter is not provided for, and some of the mills may be obliged to close temporarily, but they can then make ample repairs and get in good shape for the next year's run.

The finished-iron trade continues dull, and is probably in worse condition than it has yet been. There is very little demand for bar iron, or for plates, sheets and shapes. The mill owners are not forcing sales, but many of them are closing their works, to await a revival in the demand. Many other mills will be closed from December 15 until after the holidays, which will be a longer stop than usual, for repairs, and it is estimated that this month not half the capacity of the rolling mills of the country will be active. As the mills are carrying little stocks, and as merchants have but moderate supplies, it is believed that January will see some improvement in the demand.

The merchant-steel trade still lacks tone and prices are but nominally maintained. A peculiar contest is being carried on by domestic manufacturers against imported steel. The finest grades are now produced in this country, and the foreign article is meeting with severe competition, while the ad valorem rates of the new tariff permit low terms to compete with the domestic product of a corresponding character.

Undaunted by his previous failures in this to reform the tariff. In his forthcoming report, after discussing the amount of sur-

a proper inquiry shall have developed what which has so recently been passed that it ment and practical success. would seem proper to give it a trial before endeavoring to change it; but it has not accomplished the purposes which he desired to effect when he last year recommended that of the line running from Portrush to Busha reduction of revenue be made by a revision of the tariff that should reduce the duties on sugar, iron, steel, woolens and wool, cottons and raw material. Therefore, these recommendations must be substantially renewed, for the dangers of a large surplus are even more threatening than they were before the passage of the tariff act. We wonder if it has ever occurred to the Secretary that a reduction in customs duties does not necessarily reduce the revenue, especially if the principle of protection is retained in the law. Indeed, the only way in which a reduction of duties would reduce the revenue is to bring the tariff law to a revenue basis—or, in other words, to ignore protection, and to put duties mal condition, and a trip over the road was at such a low rate that even with the immense volume of our imports, and the increased volume that would come from low duties, the revenue would of necessity be reduced. The Secretary seems to have understood this principle in connection with the has been made, such occurrences may per reduction of the taxes on tobacco and spirits, has been made, such occurrences may per haps be classed with things of the past. as he states in his report that a decrease in the tax on these does not necessarily bring a smaller revenue, experience often having shown the contrary, and the Secretary might, by a little thought, have carried this principle over to customs duties as well, and have argued that a reduction of duties here does not necessarily bring a reduction of revenue.

The Suez Commercial Highway.

The whole trend of events in the Orient. ear after year, points unerringly to the future paramount influence of the Suez Canal in Eastern affairs. It was the rebellion of Arabi Bey that made necessary, as we have been told, the interposition of the British Government to preserve the canal from blockade, if not from destruction. The French invasion of Tonquin gives the canal new importance, and now the sanguinary triumph of the so-called Mohammedan Messiah carries with it an assurance that, so far from evacuating Egypt, the British forces are constrained to enter upon its permanent occupation, necessarily enhancing the prospective value of the Suez Canal as a channel of communication with the far East.

The coincidence of these later events may

have hastened to an agreement the pending negotiations between British shipowners and M. de Lesseps with reference to canal management. The result is a convention providing either for the enlargement of the present canal or the construction of another. English shipowners have long been restive under the alleged exactions and "vexatious pedantry" attending French control. The tonnage dues were exorbitant, and French ships were said to receive undue favor, while English vessels which ran aground were subjected to heavy costs, as a consequence of the company's own failure to fulfill their engagements. The London Times, on the occasion of M. de Lesseps' recent official visit to the British metropolis, said: "This country demands merely the practical recognition of co-ordinate rights which no concession or charter can obliterate; and no agreement which does not make provision for the exercise of such rights will be ac cepted. Small concessions in the way of reducing dues or improving the waterway do not meet the necessities of the case. The question of principle has now been raised and cannot be satisfactorily settled except by some arrangement giving to this country a share of control, whether in the existing canal or in a duplicate channel, in some degree commensurate with its political and commercial

England reasonably objected that a nation that does not hold half the stock nor own over 5 per cent. of the shipping passing through the canal should arrogate to itself the right of exclusive control. Under the convention now concluded, not only will Eng-land be more liberally represented in the directory, but large pecuniary concessions have been secured. From January 1, 1884, pilotage dues are to be abolished, and from January 1, 1885, transit dues are to be di-minished according to the rate of dividend. Moreover, French and English engineers will at once consider the question of enlargement or a second canal.

Electric Locomotion.

From a brief account which we publish elsewhere in this issue, it will be seen that the problem of electric locomotion is rapidly approaching solution. The trial of the Daft motor, to which we refer, was important in more than one way, chief interest being centered in the circumstance that it was the first practical test ever made in any country of an electric motor upon a steam railroad. A prominent feature of many electric railways thus far brought out, and in some instances grades of steel to be imported on favorable in practical operation, was the necessary insulation of the rails, with the attending dis advantages of difficulty in working in rainy weather, or when by some other means the exist in two different states, viz., solid and electric current found opportunity to pass gaseous; the gases produced are of different electric current found opportunity to pass line, Secretary Folger has again undertaken into the ground. The nature of the systems obviously called for special construction and thus prevented their ready adaptation to explus revenue, and objecting to the abolition isting lines of railway, factors which are of of the internal-revenue tax, he recommends no little importance in the question of gain- duce complete combustion of any fuel, as coal, a further reduction of customs duties after ing general favor. Mr. Daft, by a fortunate consisting of solid and gaseous ingredients,

articles can best stand the reduction. The features, and the system, from present indi-Secretary is embarrassed by the new law cations bids fair to experience encourage. cations, bids fair to experience encourage-

> The difficulties likely to be met with at any time in the working of other systems insures a thorough mixture. When and were well illustrated at the recent opening where these subdivided currents should be mills, England. The current in this case is conveyed through a conducting rail supported on insulators some distance above the ground, and contact with the motor is maintained by an arm attached to the latter and provided at one end with a brush. On the day appointed for the opening of the road, it was found that, owing to some obstacle which even diligent search failed to reveal for some time, the engine would not draw the train. At length it was discovered that progress was rendered impossible by a small piece of iron connecting the conducting rail with the road-bed, the current thus being transmitted to the ground as rapidly as it was generated. then made without further difficulty. suggested by a contemporary, this would give a bright idea to the Jesse James of that future when the electric railroad is to do away with the present iron horse. Now, however, that an important step in advance

Fuel Economy.

It is a remarkable fact that, while the principles of perfect combustion are so well and thoroughly understood, their practical application tending toward an economical uel expenditure has not yet been achieved n a general way. Combustion has been in a general way. Combustion has been defined as the rapid union of combustible elements in a fuel with the oxygen. If we regulate the supply of oxygen to the fuel so as to be just sufficient to burn the combustible elements completely, we have arrived at the point of highest economy in fuel. To show that it is possible for an economical and an uneconomical combustion to take place in the same apparatus, we may take the case of an ordinary lamp. If we turn the wick up to too great a hight, the lamp will smoke, the supply of oxygen being too If we turn small; if, now, we turn the wick down, decreasing in this manner the amount of decreasing in this manner the amount of combustible, and, therefore, increasing the relative amount of oxygen, we find the smoke disappears. Let us look at the ques-tion of perfect combustion from a chemical

has been definitely ascertained that each of the different combustible elements requires a definite amount of oxygen for complete combustion. These are given in the following table:

Combustible.	Pounds of oxy- gen per lb. of combustible.	Pounds of air per lb. of combustible.
Hydrogen	8	34.8
Carbon (imper- fect)	1.383	5.8
Carbon (perf't)	2.666	11.6
Carbonic oxide	0.571	9.488
Cyanogen	1.931	5.854
Marsh gas	4	17.4
Ethane	8.788	16.24
Olefiant gas	3.428	14.912
Acetylene	3.076	13.381
Propane	3.636	15.817
Propylene ₁	3.428	14.912
Allylene	8.2	18.920

Knowing the chemical constitution, we may readily determine the amount of ssary. The average composition of ancite coal from Pennsylvania collieries has been found to be about 85 per cent. car-bon, and hydrogen and sulphur in such in-appreciable quantities that they may be neglected. In other words, we may take that for every 100 pounds of coal we would find 85 pounds of carbon; hence we require $85 \times 2.666 = 226.61$ pounds, or 2539 cubic feet of oxygen, to complete combustion of 100 pounds of this coal, or $85 \times 11.6 = 986$ pounds, 12, 214 cubic feet of atmospheric air is required The combustion of this 100 pounds of fuel, therefore, produces 2530 cubic feet of carbonic acid gas and 9675 cubic feet of ni-trogen gas. This latter plays not only a trogen gas. This latter plays not only a neutral, but also a negative, part in the phe-nomena of combustion; it is necessary to raise the heat of this volume of gas from the raise the heat of this volume of gas from the temperature of the outside air to the temperature of the fire-box. Practically, it has been found that the president group would be the theoretical group would be the control of the fire-box. been found that the theoretical supply would of the internal revenue tax. In this the be found wholly insufficient to produce the free-trade members of the West and South desired effect. This is caused by the proximity of one mass of fuel to another and to the grate bars, to sluggish draft, im-proper boiler settings, &c. These and other practical difficulties have so altered our rules that, when the amount of air required is determined as above, the chimney is designed of such capacity and hight as to accelerate a draft sufficient to furnish double the amount of air as thus determined. Having thus seen how far practical considerations of draft, &c., influence the quantity of the air supply, thus reducing the economic capacity of furnace, we will next investigate the question, "How, when and where shall we admit the air to

get the highest economy? To consider this question fully, it is neces sary for us to look into the question of combustion a little more deeply. Suppose we mix in a measured jar containing an inflammable gas a due quantity of oxygen; per-forming the operation slowly, we find a due incorporation ensues, and the combustible gas becomes thoroughly burned without producing smoke. In this experiment the quantities are small; both are gases; there are no foreign matters present to exert a disturbing influence on the union; there is no draft or current to exert its influence, and, further, both are supplied in the correct proportions to produce perfect combustion. In a fire-box the quantities used are large nature, viz., some combustible and others in-combustible; the oxygen is hurried off by the chimney draft frequently before its work is half completed. In consideration, then, of these differences, it is evident that to pro-

combination, avoided these objectionable we must introduce the air in such a manner be very intimate. This can only be accomplished by a subdivision of the volume of air employed into separate currents, introduced can be readily seen.

Suppose we have just started a wood fire on our grates which has arrived at a certain intensity, making it ready for the introduc-tion of coal. The latter not being at a point of incandescence, the volatile hydrocarbons are distilled by the heat from the wood, pass off, and are conducted toward the uptake. These gases are, however, combustible, and if sufficient oxygen remains in the air, which has been, in ordinary types of fire-boxes, drawn over the blazing wood and igniting coal, they will burn, giving a high tempera-ture. If, as is usual, there is not sufficient oxygen left, these gases are but partially burnt and rejected, still possessing consider-able potential heat. It is, therefore, necessary to supply these gases with air from the atmosphere by some other route than that of the ash-pit, grate and fire-box: this could readily be effected by means of an air ply to the combustion chamber. The time of introduction of the air in this way should be only after and during the process of distillation of the coal gases, as admission of air at this point at any other time would result in chilling the gases produced by the combustion of the solid fuel in the fire-box. -Mechanics.

The Scranton Steel Company.

The stockholders of the Scranton Steel Company, of Scranton, Pa., have decided to ncrease the capital of the company from \$600,000 to \$1,500,000, to provide funds for the erection of blast furnaces. It will be some time before the company's plans are fully perfected, but there is no doubt that two large blast furnaces will be pushed to completion as speedily as possible. If the same policy prevails in the erection of these furnaces that was carried out in the building of the company's steel works, they will be models of their kind both for production and economical appliances. The steel works were built with the expectation of turning were built with the expectation of turning out 80,000 tons of rails per annum, but they have developed a capacity of 2,500 tons per week, although they have only two 4 ton converters. The reversing rail mill is one of the largest in the world, being precisely similar to the widely celebrated reversing mill of Bolckow, Vaughan & Co., at Middlesboro', England. The Gjers soaking pit has been used for some time, which obviates the use of reheating furnaces, and 120-foot rails are rolled direct from the soaking-pit, being afterward cut into four rails of the being afterward cut into four rails of the ordinary 30-foot length. The works have received flattering encomiums from the engineers of other works who have visited them, and not long ago one of the most wide-awake visitors remarked that the only improve-ment he could recommend was the addition of the direct transmission of molten metal from the blast furnace to the converter.

When the blast furnace to the converter. When the proposed blast furnaces are completed this will be done.

Since the purchase of the Pittsburgh Bessemer Steel Works by Carnegie Bros. & Co., the Scranton Steel Company's works have been the only steel-rail establishment in the United States entirely dependent for its sweet United States entirely dependent for its supply of pig iron on the open market. The addition of blast furnaces will show that this company propose to continue to manufacture steel rails, notwithstanding the present unsatisfactory outlook.

WASHINGTON NOTES.

(From Our Own Correspondent.) WASHINGTON, D. C., Dec. 4, 1883.

The unexpected result of the contest over the Speakership has been a topic of universal discussion in political circles. The confidence of the protection Democrats in the triumph of the better judgment of their party doubtless had much to do with misleading the friends of Mr. Randall, but there were also other reasons for the sudden collapse of the latter gentleman's campaign during the last two days of the struggle. For instance, the leaders of the free-trade wing of the party in the House cited his course on the tariff, saw a movement to cut off all possibility of any modification of the tariff. Then the hue and cry against the election of a Southern man, on the ground of expediency, naturally unified Southern sentiment against him, and, finally, the bringing of the business interest to the front as another ground of opposition irritated the Southern members, who at once set up the counter claim that Southern interests were as important as those of the North, and, as the Southern vote in the House exceeded that of the North, the South was entitled to the direction of party affairs Thus the main issues of the contest in behalf of Randall reacted in favor of his opponent.

WHO WILL CONTROL PARTY POLICY ? The claims of the Southern Representatives that their numerical strength in the House entitled them to predominance in its affairs were supplemented by the position taken by Mr. Carlisle and kept constantly in view by his principal lieutenant, Mr Morrison, on the tariff question. This was the real issue at stake, and was to decide whether the free trade or the protection wing of the party was in the ascendancy. enormous majority of Mr. Carlisle over the protection candidate, and, in fact, over the combined vote of the two other candidates. settles that question beyond a doubt

ANALYSIS OF THE VOTE ON SPEAKER.

The following shows the vote for Speaker in the caucus, which was the real test of strength as a political issue, by sections:

New England States	. 1	Randall.	Cox.
Middle States Southern States		20	18
Western States	. 80	7	8
Pacific States	3	1	8
Total	. 106	52	30

WHAT THE VOTE INDICATES

The manufacturing States of New Eng. land were equally divided, giving the two free-trade candidates three and the protect tion candidate three of their Democratic votes. In the four Middle States, where the manufacturing interests are large, Delaware gave her one vote to Carlisle as the candidate of the Southern wing of the party, and without reference to the growing industries Wilmington and other centers within her borders. Mr. Cox received 13 out the 21 Democratic votes of New Y representing the free-trade constituencies, and Mr. Randall had the support of the entire II votes of his own State, and seven from New York and three from New Jersey added. In the Pacific States the protection candidate received but one vote, while the two free-trade candidates evenly divided the remaining six votes.

WHERE THE STRENGTH CAME FROM.

The aggregate of the above States, exclu sive of the Pacific States, representing the great mechanical industries of the country, and favoring a protective tariff, gave Carlisle two votes and Cox 15, or a total of 17, against 24 for Randall. In the Southern and West-ern States, where the Democratic party takes a bold stand for free trade, Carlisle rolled up the startling number of 101 votes, against but 27 for Randall, or nearly four to one, and,

with Cox's 12 votes, more than two to one.

The analysis of the vote given may, therefore, be regarded as forshadowing the policy of the majority in the Forty-eighth Congress. HISTORY REPEATING ITSELF THE WRONG WAY.

In 1811, just 72 years ago, Henry Clay, of Kentucky, entered the House of Repre-sentatives and was chosen Speaker on the first day of his appearance in that body, and was five times re-elected to that post. It was during his presence in the House in the session of 1819-20 that he came forward boldly as the champion of protection to American industry. Eleven years later, in 1831, having been elevated to the highest body of the legislative branch of the Government, he again labored strenuously in the interests of the tariff, and as a recognition of his broad views of the best interests of the country was three times nominated for President of the United States. To-day we have a citizen of Kentucky again in Speaker's chair, a gentleman of undoubted ability but representing a public policy affecting the economic interests of the country diametrically opposed to those so boldly advocated by his illustrious fellow citizen and predecessor. It may be possible that John G. Carlisle, in his own way, will experience the same prominence as the champion of free trade, and experience the same results of defeat and disappointment.

There is no doubt that the sentiments of the mass of the people to day favor the views of Henry Clay rather than those of John G. Carlisle on the question of protection of American industry. His election to the Speakership is certain to bring the question to the test.

WHERE OUR SPEAKERS CAME FROM.

It is interesting to note the States that have furnished the Speakers of the National House of Representatives. In the long array from Muhlenberg, of Pennsylvania, to lisle, of Kentucky, the latter State leads. Henry Clay, of Kentucky, filled the chair of the f2th, 13th, 14th, 15th and 18th Con-gresses; John White, of Kentucky, occupied the chair of the 27th Congress, and Linn Boyd, of Kentucky, the 32d and 33d Congresses, making in all eight Congresses or 16 years for Kentucky, and now, John G. Car-lisle adds another, the 48th Congress, to the list. Virginia stands next, having filled the chair during six Congresses, viz., the 17th by Philip Barbour; the 20th, 21st and 22d by Andrew Stevenson; the 26th by R. M. T. Hunter, and the 28th by John W. Jones. Pennsylvania occupied the chair of the 1st Congress in the person of A. Muhlenberg, who also filled the chair of the 3d; Galusha A. Grow the 37th, and S. J. Randall part of the 44th, 45th and 46th. Next is repre-Next is repre sented Massachusetts in the persons of Theo dore Sedgwick, in the 6th; dore Sedgwick, in the oth; Joseph B. var-num, in the 10th and 11th; Robert C. Win-throp, in the 30th, and N. P. Banks, in the 34th Congresses. Indiana filled the chair in the persons of J. W. Davis, of the 29th; Schuyler Colfax, of the 38th, 39th and 40th Congresses, and Michael C. Kerr during part of the 44th Congress. Of the other States, the Speaker's chair has been filled for three States of New Jersey, North Carolina, Tennessee and Maine; twice by Representa tives from South Carolina and New York and once by Representatives from Connecti cut, Georgia and Ohio.

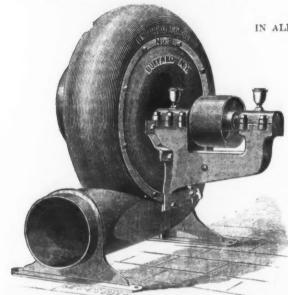
THE CHAIRMANSHIPS.

The Speakership having been disposed of, the next question in order is the chairmanships of the important committees. These include about 20, the Committee on Ways and Means ranking third on the list. The task of distributing the 325 members of the House among the 43 standing, 5 joint and replect committees are all the control of the 9 select committees, so as to secure work, and not to offend the personal wishes of the personal friends, is no easy under-taking, as may well be imagined. The time usually required to complete the work is from two to three weeks, taking the experi-ence of the last four or five Speakers. It is, therefore, early to speculate upon this subject. It is settled, however, that Mr. Morri son, who nominated Mr. Carlisle, and who was his champion from the start, will be chairman of the Committee on Ways and Means. John Randolph Tucker, of Virginia, another free trader, will also be a member, and the friends of the notorious Frank Hurd, of Ohio, are pressing him. Mr. Carlisle's advisers suggest Kasson as the head of the Republican wing of the committee, for the reason, as they assert, that he is not entirely sound on the high pro-tective tariff principle. Judge Keliey will doubtless go on as a matter of courtesy.

AN AGGRESSIVE POLICY.

Speaker Carlisle says that his election is speaker Carlisie says that his election is the beginning of a new departure, a recognition of principle—that the Democratic party would now go before the people with an aggressive policy on all great issues. This is a very plain statement of what the people will have to face on the tariff question. NEW AND IMPROVED

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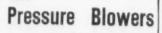
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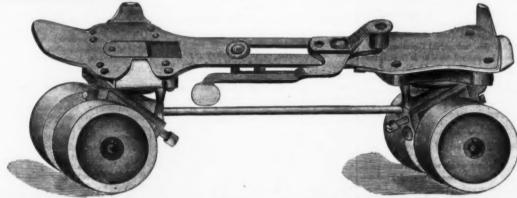
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tatives of the Forty-eighth Congress, pre-pared by the clerk, shows the total representation to be 325, as established under the new apportionment, as follows:

Congress was set in motion by the usual forms incident to such an occasion. Upon forms incident to such an occasion. Upon taking the chair the new Speaker ventilated his views on the all-absorbing topic by insinuation rather than by direct application, which suggested the policy of disarming the public apprehension of unfavorable action. The speech is regarded as an extremely adroit composition. It admits that something will be done, but how far and when and how must be governed by party expediency just now. The observation that there need be no fears of anything "actually injurious to any interest" being done is looked upon as a polite way of saying done is looked upon as a polite way of saying that "tariff for revenue only" belongs in that category.

THE PERUVIAN TARIFF.

Minister Phelps has notified the Department of State that General Iglesias has issued a decree, dated October 24, re-establishing the duties at the posts evacuated by the Chileans. The tariff in force up to January 13, 1881, remains in force, with the addition of 10 per cent, ad valorem increase on articles in classes 1, 2, 3, 4 and 6, and 5, per cent, ad in classes 1, 2, 3, 4 and 6, and 5 per cent. ad valorem increase on the rates of classes 5 and 9. On all articles hitherto on the free list a duty of 5 per cent. ad valorem is im-

Rolling Mill Items.

TRENTON, N. J., Nov. 28.-A reduction of TRENTON, N. J., Nov. 28.—A reduction of to per cent., to go into effect on the 10th of next month, has been announced in the wages of the "ton" men at the New Jersey Steel and Iron Works, in this city. The "ton" men include the puddlers, rollers and heaters, who number a couple of hundred, and whose wages range from \$2 to \$4 a day.

PITTSBURGH, PA., Nov. 30.—All the miners of the Cambria Iron Company, at Johnstown, struck this evening against a 10 per cent. reduction, which takes effect to-morrow. This will not stop the mill. The Knights of Labor are resisting reductions and sustaining strikers to the full extent of their ability. Not for years has the labor situation been so

unsatisfactory as at present.

A telegram to the New York Herald, dated at Pittsburgh, November 30, says that Oliver Brothers & Phillips and the Republic Iron Works have reduced their employees' wages to per cent. but this must only relate to to per cent., but this must only relate to special classes of workmen, as the wages of rolling-mill hands will hardly be altered until next June. The same telegram says that the Scutt Barbed Wire Mill is closed, and it is not known when work will be re-

IRONTON, OHIO, Nov. 23.—The Kelly Nail and Iron Company, who have been building a new mill, have a strike on their hands before they get their mill in operation. The nailmen who were to be employed in the mill put in a bill for getting the machines ready for work, which the operators refused to pay, as they thought the price exorbitant, in consequence of which the nailmen refused to

start the machines.
PITTSBURGH, PA., Nov. 28.—Nearly all the iron mills are shutting down to-day on account of Thanksgiving. Several of them will not light up again until Monday, thus giving he men a three days' vacation. None of the nills are crowded with orders, and can easily afford to lie idle.

afford to lie idle.

PITTSBURGH, PA., Nov. 29.—The shutting lewn of the Edgar Thomson and Pittsburgh Jessemer Steel Works is now a matter of certainty within a very few days if no new orders come in. The orders at present to be illed by the Edgar Thomson works will not less longer than the first week in December. last longer than the first week in December, inless they succeed in filling an order for loco tons of rails, which they have on hand, but which the party for whom they are to be nade does not wish to have made at present. The Pittsburgh Bessemer Steel Works, it Homestead, are now manufacturing billets and blooms for the Union Iron Mills. They ulso have an order for rails, which, if satisactory arrangements can be had, will be illed, but which will not run the works onger than the 15th of next month. Wilon, Walker & Co.'s mill shut down yester-lay evening on account of lack of orders. Iow long the suspension will last is not cnown. Miller, Metcalf & Parkin and the inch department of Clark & Co.'s mill also stopped yesterday evening. Lack of orders s given for the reason in both cases. Singer, Nimick & Co., of the South Side, are makng a change in the running arrangement of heir mills. One-half of the men are to work the first three days of the week and the second half the last three. Oliver Bros. & Phillips are starting up again to-morrow norning, to run full time with a full crew of hands. The Black Diamond Steel Works are running full double turn, with plenty of orders. The Keystone Bridge Company have plenty of orders, and report the outlook as favorable for a continuation of the same. Nothwithstanding the dullness in other branches of the iron trade, the car works are busily employed, and boiler shops, locomotive works and establishments manufacturing

works and tool-making machinery have a good many orders ahead.

HALIFAX, N. S., Dec. I.—The London-derry Iron and Steel Company are in financial difficulties. Possibly the company will be wound up and the assets go to form a new company. The Merchants' Bank, of Halifax, is involved to the extent of \$100,000, and Gillespia Moffert & Co. of Montreal to the Fillespie, Moffatt & Co., of Montreal, to the amount of \$72,000.

PITTSBURGH, Nov. 29.—The Dispatch re-ports the suspension of the Kittanning Rolling

It looks like the old Clay campaigns over again.

THE POLITICAL COMPLEXION OF THE FORTY-EIGHTH CONGRESS.

The official roll of the House of Representatives of the Forty-eighth Congress, prepared by the clerk, shows the total representative ways in 1823. There are about two which was in 1878. There are about 100 nailers, 100 feeders and 20 furnacemen on both turns. The wages heretofore paid ranged from \$75 to \$90 for nailers and \$30 for feeders per month. The company has many orders.

Joliet, Ill., Dec. 4.—Notices were posted

to-day in all departments of the Joliet Rolling Mills that the mills will be shut down for an indefinite period and the hands discharged on Dec. 15. The reasons for closing the

on Dec. 15. The reasons for closing the works are not given.

BALTIMORE, MD., Dec. 4.—Messrs. Coates & Brother, proprietors of the Locust Point Rolling Mills, failed to-day. Their liabilities are about \$75,000 and their assets about the same. The firm state that every cent of indebtedness will be paid. The rolling mills employed 200 men. The mills were shut down on Saturday night and all the men were paid in full and discharged.

Exodus of Barb-Wire Manufacturers —It is reported that a secret meeting of all the barb-wire manufacturers of Joliet, Ill., was held at that city on the 10th ult., for the purpose of forming a pool, not only to oppose Washburn, but to effect an agreement whereby all the manufacturers will desert the State in a body and locate in St. Louis Kansas City and other Western Louis, Kansas City and other Western points covered by the effect of the recent decision of Judge Treat, in St. Louis, pro-nouncing Washburn's patents invalid. Judge Blodgett's decision in that district, which up-Bloagett's decision in that district, which up-holds Washburn and gives to him the exclu-sive right for barbing wire for fence pur-poses, is still in effect, and all manufactur-ers in his jurisdiction are held subject to Washburn's patent, while in Judge Treat's district Washburn is powerless, and manu-facturers are permitted to go ahead without interference and without the nayment of any interference and without the payment of any royalties whatever. They can, therefore, put out their product and reap a good profit at prices which, on account of heavy royalat prices which, on account of heavy royalties, manufacturers in that district cannot compete with except at a loss. This new corporation already has agents out West hunting for desirable locations, and the hegira of the barb-wire men from Illinois may soon be expected. The citizens of Joliet are considerably exercised about it, since it will throw from 500 to 1000 men out of employment and take from the place its dozen or more barb-wire fence factories, which add largely to the wealth and business

Carrying a Steamship in Sections.—
The Athabaska, one of the Clyde-built steamships for the Canadian Pacific Railway, recently arrived at Buffalo. She came in two sections, which will be joined into a complete hull at the lower dry-dock of the Union Shipyard. The Athabaska is one of the five steamships that will form a line from Algoma Mills, Georgian Bay, to Port Arthur, Lake Superior, a distance of 350 miles. The line will be owned and run in connection with the Canadian Pacific Railway. The Athabaska is of steel throughout. She is 270 feet over all, 38 feet beam, draws 16 feet 2 inches, and measures 8 feet between decks. The hull is divided into seven compartments. Her carrying capacity is about 2000 tons. One of the most remarkable of her appliances is what is called a repeating her appliances is what is called a repeating telegraph, by means of which the pilot gives telegraph, by means of which the pilot gives the signals to the engineer, who receives them on a dial in the engine room, and sends them back to the pilot on the bridge. The latter can thus tell whether his orders have been understood. Another indicator on the bridge shows the direction of the rudder at all times. On the arrival of the Athabaska at Montreal it was necessary to cut the hull in two in order to take it through the shallow canals of the lower St. Lawrence. As she was built with this object in view, the she was built with this object in view, the work was readily accomplished. The sections were placed on pontoons to go through the canals. Arriving at the foot of Lake Ontario, the pontoons were removed, and the parts rested on their own bottoms.

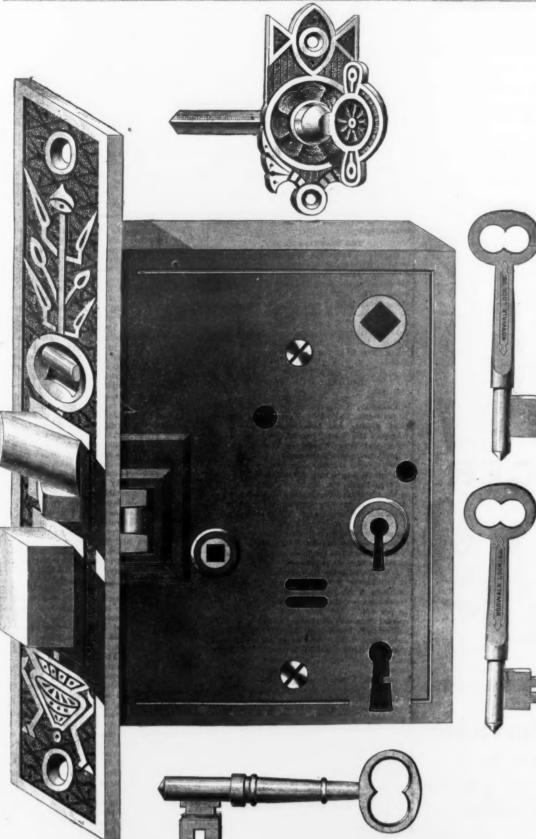
An exchange says: "The Owasco River Railroad, running into Auburn, N. be equipped with electric gates for crossings. The gates will be set over the tracks, so that their tendency, through the influence of a spring at the hinge side, will be to fly open, but they will be held shut by electric catches. As the train approaches the gateway from either direction, the first set of wheels coming in contact with a spring set by the rail at some distance from the gate closes a circuit and releases the gate, so that it flies pen. Then the pressure of the wheels upon double lever arrangement by the side of the track keeps the levers down until the last truck has passed through the gateway, when the lever will rise again and the gate is automatically closed behind the train. addition to opening the gates at each crossing, as the train approaches the apparatus causes gongs to sound continuously until the gates are closed again, and also swings out two danger signals, one for the street and one over the sidewalk."

A new system of cable line railway is to be tried in Idaho, between Hailey, the northern terminus of the Wood River branch of the Oregon Short Line, and Ketchum, a town miles distant. The pulleys carrying cable will be above the track, which is of 3 feet gauge. The necessary power is derived from the current of the Wood River at a point where the water has a velocity of flow of 65 feet per minute. It is expected that the speed attained by the cable will be such as to take a car between the termini in one hour.

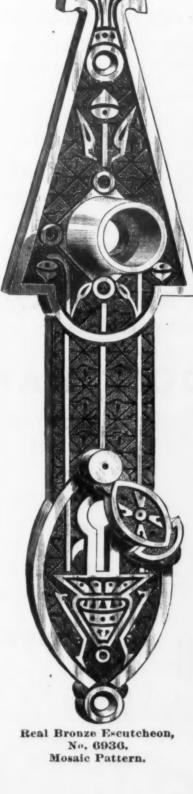
It is stated that the Cape Cod Ship Canal Mills. The mea were paid off yesterday, and the mill will shut down for an indefinite period.

READING, PA., Dec. 3.—The nailers at the nailworks of the Pottstown Iron Company, at Pottstown, went on strike this morning,

NORWALK LOCK COMPANY, SOUTH NORWALK, CONN., MANUFACTURERS OF DOOR LOCKS, KNOBS AND BUILDERS' HARDWARE.



Front Door Lock, No. X6291, Real Bronze Front, Mosaic Pattern.

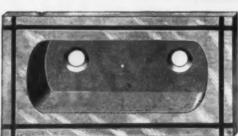




Real Bronze Rose and Escutcheon Combined, No. 6954%. Mosaic Pattern. For Lock No. X6291.



Real Bronze Door Knob, No. 6604.



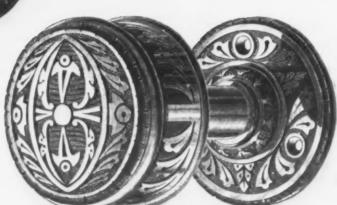
Real Bronze Flush Sash Lift, No. 711%. Line Pattern.



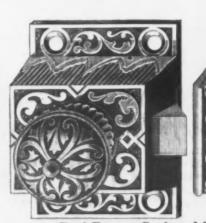
Sash Lock, No. 4500. Frost's Patent.



Real Bronze Bell Pull, No. 518.



Real Bronze Door Knob, No. 6713.



Real Bronze Cupboard Turn, No. 3525.



Real Bronze Drop Escutcheon, No. 6896. Mosaic Pattern.

The Daft Electric Motor.

Responding to an invitation recently sent us by the Daft Electric Light Company, of this city, we had occasion to witness a very interesting trial of the Daft electric motor, held at Saratoga on the 24th ult. For some time past Mr. Leo Daft, electrician of the past Mr. Leo Daft, electrician of the

Names of Files.

company, has been making extended experi- implies that it is suitable for filing the slots

they are often termed.

The term "flat" may be considered

both in their width and thickness. They are single-cut, and are usually either bustard or second-cut, although

they are sometimes double-cut. Mill files of both cuts are principally used for sharpening mill saws, mowing-machine knives and plows, and in some machine shops for rough lathe

some machine stops for rough lathe work, and, to some extent, in fini-hing composition brasswork. Mill sections are occasionally made blunt—that is to say, their sectional shape is alike

from end to end-in which case they

are mostly double-cat, and seldom less than 8 inches in length. They

each side. This fits them for the mo-t accurate of

work, on which account they are generally pre-

ferred by expert workmen They are nearly parallel in width and have one safe

edge and one edge cut sin-gle, while the face is cut

double. Hand-files are also made equaling, the term

equaling meaning that, although apparently blunt or

of even thickness through

equaling hand file is especially suitable for such purposes as filing out long keyways in which a great part of the file length is in action, and it can, therefore, be easily pushed in a straight line.

The flat file Fig. when you in the straight line.

cut, smooth and dead-smooth being used by machinists for finish ing purposes, the latter preceding the polishing processes.

Pillar files are tapered in thick ress from the middle to each end; the width is nearly parallel, and one of the edges is left safe.

They are double-cut, and, al-

though not in general use, are especially adapted to narrow work, such as in making rifles, locks, &c. The square file ranges from 3 to 16 inches in length, and is made for general purposes with considerable taper. It is usually

double-cut, the bastard being the principal cut, the second-cut and

is usually

the file to be used in a corner without cutting more than one of the work surfaces. When



The Names of Files .- Fig. 1 .- A " Flat File."

ments at their works at Greenville, N. J., and visitors who have been favored with admittance have in almost every instance gone away fully convinced of the practical success of the system. The railway, as there success of the system. The railway, as there worked on a small scale, some months ago, presented nothing unusual in appearance, the rails being laid in the ordinary way without any attempt at insulation, as practiced in other electric railways, Mr. Daft's method of employing a low-tension current preventing "bullet files," "hand files," and leakage to the ground. The motor, as may be expected, differs radically in appearance from the steam locomotive, its prominent features being an apparent absence of complicated mechanism and a compactness which immediately strikes the observer. The electric diately strikes the observer. The electric gradually increase from the mill to the square file. Mill files are slightly tapered from the middle to the point tapered from the middle tapered fr leakage to the ground. The motor, as may be expected, differs radically in appearance from

16 14 12

Fig. 2.-Full-Size Cross-Sections of "Mill Files."

erected at a convenient station, passes through the rails and is transmitted to the working parts of the motor in a manner one having no feeth upon it, which enables working parts of the motor in a manner which we may have occasion to describe at some future time.

The trial referred to was conducted on a short section of the Sarat ga, Mt. McGregor and Lake George Railroad, which for that purpose had been provided with a central rail carrying the current, the presence of ordinary cars on the same length of track preventing the adoption of the more simple.

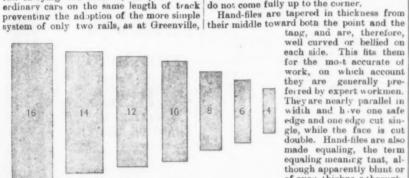


Fig. 3.—Full-Size Cross-Sections of "Hand-Files." on even thickness throughout the length, yet, in fact, there is a slight curvature, due to the file being at the time stated. Saratoga was reached thickest in the middle of its length. An at the time stated. Saratoga was reached after a pleasant run of some five hours, and after a brief delay the invited guests, some fifty or sixty in number, from New York and vicinity, repaired to the scene Action, where preparations were in progress for the carrying out of the experiment. Curiosity as to the details of the system having been satisfied by an extended examination of the rails and motor named "Ampère," the latter was hitched to one of the cars of the Saratoga, Mt. McGregor and Lake George Railroad, kindly provided for the purpose, and started down the track with a load well calculated to test its capabilities.

Taken altogether, and notwithstanding Taken altogether, and w



Fig. 4.-Full-Size Cross-Sections of "Flat Files."

some unfavorable incidents, the test was unquestionably successful in every respect, further interest, moreover, being attached to it from the fact of its having been the first practical and commercial test ever made in any country of an electric motor upon a steam railroad. We understand that the successful issue of files are in every respect like the source of the sum of the second-cut and smooth being mainly used by the machinist. Square blunt files range from 10 to inches in length, of the same sectional sizes as the square taper, and are cut double, usually bastard. For machinists' use, however, they are used in the second-cut also, and are provided with sometimes one and sometimes two safe side. Square equiling the same sectional sizes as the square taper, and are cut double, as and are provided with sometimes one and are provided with sometimes one and the same sectional sizes as the square taper, and are cut double, as and are provided with sometimes one and are provided with sometimes one and the same sectional sizes as the square taper, and are cut double, as a supplied to its first practical and commercial test ever made in any country of an electric motor upon a steam railroad. We understand that the successful issue of the experiment has resulted in the placing blunt, except in the care taken to prepare a

Fig. 5 .- Full-Size Cross-Sections of "Pillar Files."

of an order for several motors for the road slight curve or belly in the length of the

14

12

and to but limited extent by machinists. Some of the warding files are provided with teeth upon their edges only, which are made quite rounding, the cut usually being secondcut, single.

their edges. They range in size from 3 to 5 inches in length, progressing by half-inches in the sizes below 6 inches. They are sometimes made. They are mostly second-cut double, and usually on both edges, and are mainly used by locksmiths and jewelers, and to but limited extent by mechanical cut or smooth and double-cut, and are principally used in machine shops for filing up outters for machine shops for filing up

cipally used in machine shops for filing up cutters for working metals.

Cant files, whose cross-sections are shown in Fig. 13, are usually made blunt and cut double, mostly bastard, on all three sides. ut, single.

These sizes are usually 6, 8 and 10 inches.

Files deriving their sections from the circle

Lightning files are of the cross-section shown are shown from Figs. 8 to 11. "Round in Fig. 14, the term lightning being known















Fig. 6.-Full-Size Cross-Sections of "Square Files."

files" are circular in section, as shown in principally by those using the saws of this Fig. 8, their lengths ranging from 2 to 16 name, and to some extent by those using ig. 8, their lengths ranging from 2 to 16 nother, and are usually of considerable taper. The small bastards are mostly single-cut and the larger sizes double-cut. The second-cuts and smooths are rarely double-cut, except in some of the very large sizes. In imitation of double-cut, however, they are cometimes made with the first, or overcut,



Fig. 7.—Cross-Sections of "Warding F.les."

very open, called "hopped," which adds however, but very little to the cutting capacity of the file. The very small sizes—as, ay, those of one quarter inch and less in diameter—are often called "rat-tailed" files. For some classes of work—as, for instarce, the circular edges of deep keyways-round, blunt files are used, their sizes running up to 18 and 20 inches, their principal cut being bastard and double.

The gulleting file is a round, blunt saw-file, and, like most other files for this purpose, is single-cut (except for a small space at the point, which is left uncut). Its principal use is for extending the gullet of what are known as gullet-tooth and briar-

oothed saws.

Half-round files are of the cross-section shown in Fig. 10, and although their name implies a semicircle, yet, as gen-erally made, their curvature does not exceed the third part

of a circle. They are made taper; the usually double-cut. bastard is usually double-cut on both iss (Fig. 16) are but litt sides; the second-cut and smooth is double-cut on their flat sides, and single-cut on the

other cross-cut, M-shaped saw teeth. The obtuse angle of this file is five canted, while obtuse angle of this file is five-canted, while
the regular cant is hexagon or six-canted,
and it is found to be too obtuse for the purposes required of the saw file. They are
made blunt, and range in length from 4to 12
inches, and are cut (except for a short space
near the point) sing e on their three sides.
Knife files are of the section shown in
Fig. 15, and rarely exceed to inches in
length, the principal sizes being 4, 5 and 6



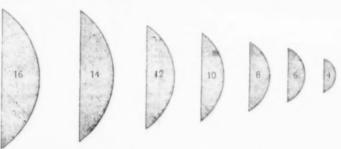
Fig. 8 -Cross-Sections of "Round Files."

inch. They are tapered, resembling some what the blade of a knife, and are cut double. The very acute angle of the sides of this file makes it especially useful in filing the inner angles of the read and main springs of a rifle lock and work of similar shape. There files are also made blunt. Cross files (sometimes called d uble half-round or crossing files) are of the section shown in Fig. 16. They are mostly made to order, either blunt or tapered, and



Fig. 9.—Sections of "Pitsaw Files."

"Feather-edge" files (Fig. 16) are but little used by the mechanics of this day. They were formerly used in cut on their flat sides, and single-cut on the curve side, except occasionally in the larger gun lock is sometimes called), and also the sizes, when it is double-cut or hopped. Half-round files for wood usually range in size



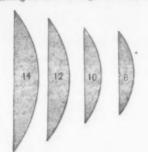


Fig. 11.—Sections of "Cabinet Files."

to some extent used by plumbers and marble workers.

Cabinet files are of the section shown in Fig. 11, being both wider and thinner than the half-rounds, the sectional curvature the hair-rounds, the hair being somewhat less than the fifth part of a cry in use.

Circle. They are made taper from near the Reaper files (B. Fig. 18), so called from circle middle to the point, while both the files and the rasps are made from 6 to 14 inches in length; 8, 10 and 12 inches are the sizes in most common use. As usually known the cabinet file is a bastard double-cut. The

cabinet file is a bastard double-cut. The cabinet rasp is punched smooth, and both the cabinet rasp and file are rarely made of any other degree of coarseness. They are used by cabinet, saddle-tree, pattern and shoe-last makers, and also by gunstockers and wood-workers generally. Three-square files are made with

equilateral triangular sections, as

in Fig. 12. They are tapered to a small point with considerable

are rounded and cut single; the edges are safe or uncut, while the edges are usually made half-file and half-rasp reversed (4/rasp and 3/file, while sometimes made, are the exception). The file quarters are bastard double-cut, and the rasp quarters second-cut. This form of shoe rasp is the one in general use at this time, having almost entirely



Fig. 13.-Cross-Sections of "Cant Files.

superseded the flat and swaged rasps form

their u-e in sharpening the knives of reap-ing and mowing machines, are of the crosses in section shown. They range it length from the 7 to 10 inches, are slightly tapered, and are cut single and on their sides only.

Tumbler files, whose cross-section is shown



Fig. 12 .- Sections of "Three-Square Files."

of an order for several motors for the road mentioned.

There is a law of New Mexico that requires all railways to use footguards in their witch frogs. They are simply pieces of welly in a sight curve or belly in the length of the square blunt, which greatly enhances their value in filing out the edges of keyways, splines or mortises. The fault of the square blunt, which frogs. They are simply pieces of heel, having no belly, is apt to come into two growed on the upper side to give room for the flanges of the wheels, and driven in between the switch rail and the main rail.

Sight curve or belly in the length of the curve, and are double-cut. The larger of the tumblers of gun locks, but are now bastard, and are used to a considerable extent in rolling mills. The smaller sizes are double. It will be seen, bowever, that not unfrequently smooth or dead-smooth, unless for some special purpose, the pitsaw and are used in machine shops quite generally for filing interval angles more acute than the rectangle, clearing out square cortiles.

Labor Statistics.

The Ohio Bureau of Labor Statistics has recently published reports from 33 points in the State, showing the average earnings of workmen who were heads of families to

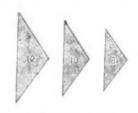


Fig. 14.—Cross-Sections of "Lightning Files."

have been only \$649.15 in 1881, against \$656.81 in 1880, while the family expenses increased from \$532.96 to \$560.79. Thus, the cost of living increased about 5 per cent. Only laborers, and not foremen, are included in this estimate of earnings, and the assistance of others in the family is counted in.

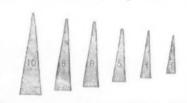
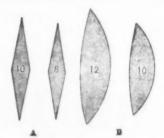


Fig. 15.—Cross Sections of "Knife Files."

The statistician notices a marked growth of discontent among working people in 1882, and attributes it solely to the rise in the cost of the necessaries of life. The report also shows that of 22 strikes in that State in 1882 only five were successful. The time lost wa, in the case of iron and stee workers in weeks; sair builders, 3 weeks, and eigar-makers, 2 weeks. Advances in wages ranging from 8 to 16½ per cent. without strikes, were reported in 23 occupations during 1882.

An interesting experiment in the way of arbitration is now in progress among the boot and shoe manufacturers of Cincinnati,



16 .- Sections of (A) " Feather Edge Fig. Files" and (B) "Cross Files."

and has thus far been a success. A "board of arbitration and conciliation" has been organized, composed half of employers and half of workmen. Before this board comes every disp te, and pending a decision work is to be continued in the shops as if nothing If the board cannot reach a had happened. decision, each side selects an arbitrator, and the arbitrators an umpire. The decision of these three is final. Each factory has a shop



Fig. 17.—Cross Sections of "Shoe Rasps."

committee, composed of the proprietor or a member of the firm and two persons selected by the employees, who hear any dispute in the factory, and if they cannot agree they refer it to the board. If any employee refuses to submit to a decision, his shop is to be declared on a strike, and if any employee so refuses he is to be deprived of work in fac-



Fig. 18.—Cross-Sections of (A) "Tumbler File" and (B) "Reaper File."

tories represented in the board. No employer or workman is allowed to interfere with anybody because he is a union or a non-union man. This organization has, in the few months of its existence, settled a disagreement in regard to the wages of shoe-cutters, and fixed a wages scale for six

Although the west coast of Mexico has emed to offer a succe-sful field for mercial operations ever since the time of the California gold discoveries, Americans find that progress in that direction is attended with many difficulties. Coastwise trade is increasing, but not rap'dly. A gentleman who recently returned to New York, after visiting the principal Mexican towns on the Pacific side, represents that German houses established there control almost everything. They sell goods on long credit and at high rates of interest, taking mortgares on the growing crops as security. Even the stores for the most part are owned by foreign houses and managed under instructions. Englishmen also do well, but are less frugal and do not cater with as much success as their German rivals to the wants of the

INFRINGEMENT OF JOHN WILSON'S TRADE MARK, MASSACHUSETTS, U.S.A.

JOHN WILSON'S BUTCHERS' KNIVES, BUTCHERS STEELS

> SHOE KNIVES. TRADE MARK



REGISTERED IN ENGLAND WASHINGTON, U.S.A., AUSTRALIAN & OTHER BRITISH COLONIES, & GERMANY.

ACKNOWLEDGMENT AND AGREEMENT.

"WHEREAS, I, GEORGE A. ROBINSON, of West Mansfield, County Bristol, State of Massachusetts, have heretofore manufactured and sold certain lives bearing a Mark which is claimed to be an imitation of the trade-mark need by John Wilson, of Sheffield, England, which consists of four peppercorns and liamond, under the mistaken belief that I had the right to do so.

NOW, This, is to Witness, that, in consideration of the forbearance of the presentatives of the said John Wilson to sue me for damages for the wrong presaid, I do hereby undertake and agree,

FIRST, to surrender and deliver to the Attorneys for the said John Wilson, all knives now on hand, and in my possession, or under my control, bearing the said imitation trade-mark, and

SECOND, I further undertake and agree to and with the said John Wilson, and his legal representatives, not to manufacture or sell, or cause to be manufactured or sold, at any time'in the future, Knives or other Cutlery, bearing his trade-mark aforesaid or any imitation or simulation thereof. IN WITNESS WHEREOF, I have hereumto set my hand and seal at West Mansfield, aforesaid, this thirty-first day of May, 1883.

WITNESS:-E. M. REED." (Attorney for Defendant.)

G. A. ROBINSON. (L.S. Imitation SHE ARSTEEL

WORKS:-SYCAMORE ST., SHEFFIELD, ENGLAND. Established 1750,



Manufacturer of Razor Strops & Dressing Cases. Sole Agent for Worcester Cutlery Co. Importer of Fine Razor Hones.

American Made Razors. WARRANTED BEST CUTTERS IN THE WORLD. J. R. TORREY RAZOR CO. Factories: WORCESTER, MASS. Send for Price Lists.

SPENCER & UNDERHILL, 94 Chambers St., New York, AGENTS FOR N.W YORK CIPY AND VICINITY, FOR "EUREKA"

CLUB



Also American Screw Co.'s Wood, Machine and Rail Screws, Stove and Tire Bolts, Rivets, &c.

O. Ames & Son's Shovels, Spades and Scoops.

E. W. Gilmore & Co.'s Strap and T. Hinges.

Hinges.

W. & S. Butcher's Chisels, Plane Frons, A. Field & Son's Tacks. Brads, Nails, &c. Brade's Brick Trowels.

Brade's Brick Trowels.

HA F. D. W. A. F. L. H. A. F. L. W. A. F. L. W. A. F. L. H. A. F. L. W. A. F.

GENERAL HARDWARE.

FORBES'

PATENT ACME CLUB SKATE



THE BEST SELF-FASTENING SKATE EVER INVENTED.

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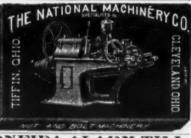


Can be attached to or removed from a boot or shoe in two seconds, and does not have to be worn for weeks when there is no snow. Prices and disounts given on application.

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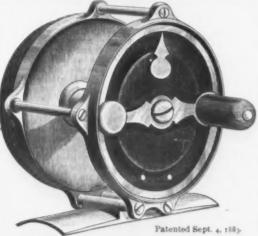
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SUSCEPTIBLE OF OVER 100 CHANGES. Better than any other Till in the market. No tam-pering with keys, as it alarms every time a key is touched, unless acquainted with combination. Send for prices and compare this Till with others in the market. No Till-tapping possible.

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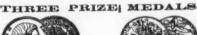
manufacturers of and wholesale Dealers in Cotton and "Long Flax" Sail Duck, Cotton and Linen Ravens, Creed's Patent Ships' Crews. Heitman's Wire Rope Splicers. Agent for Raymond's American Crane Oil for lubricating Cylinders and Valves.



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RAISED PILLAR TREBLE Multiplying Reel.

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FILES STEEL,

Table Knives, Razors, Shovels, &c., &c., of every description.

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W. & S. BUTCHER SHEFFIELD, ENGLAND,

Manufacturers of Files and Edge Tools, STAMPED

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Patented Articles of Malleable Iron.

Hammer's Malleable Iron Oilers.



Hammer's Adjustable Clamps. Hammer's Mall. Iron Hand Lamps.

Hammer's M. I. Hanging Lamps. **NEW** pattern Heavy Screw Clamps; strongest in the market. For sale by all the principal Hardware Dealers. Send for Price List.

Malleable Iron Castings of superior quality, and Hardware Sp Malleable Iron made to order

HAMMER & CO., BRANFORD, CONN.

GUN POWDER. Laflin & Rand Powder Co... No. 99 Murray Street, New York,

Manufacture and sell the following celebrated brands of Sporting Powder known everywhere as ORANGE LIGHTNING.

ORANGE DUCKING. ORANGE RIFLE, more popular than any Powder now in use.

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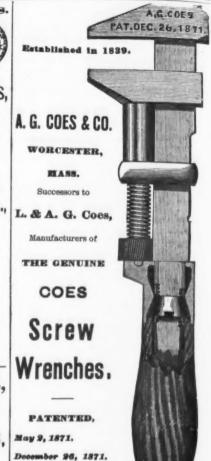
SAFETY FUSE, FRICTIONAL & PLATINUM FUSES.

Pamphlets showing sizes of grain sent free.

CENTRAL ACTION.

FLUSH BALANCE HANDLE ADJUSTABLE CLICK.

Frederick Malleson,



August 1. 1876 The backstrain when the wrench is used is borne by the bar—not by the handle.

The strongest Wrench made, and the only successful Re-enforced Bar.

None genuine unless stamped

A. C. COES & CO.

Our Agents, GRAHAM & HAINES, 113 Chamber St., New York, carry a full line of our goods, and will be pleased to serve you at factory prices.

HILL'S Eureka Dryer.

December 98, 1875

THE BEST In the Market For Indoor Use.

Also Manufacturers of HILL'S CHAMPION DRYER. For illustration see last Iron Age. Circulars and discounts to the trade on application,

HILL DRYER CO., Worcester, Mass.

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E. B. STOCKING, Opo. Patent Office, WASHINGTON, D. C.

THE WIRE GOODS CO.,

Worcester, Mass., MANUFACTURERS OF SHARP GIMLET POINTED

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WIRE BENDING A SPECIALTY. Wire Straightened and Cut to Length.

RIFLE MANUFACTURERS. GUNS

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WHOLESALE ONLY.

American and English Goods, Fishing Tackle, Winchester and Other American Rifles. Manufacturers of Leather Gun Cases, Hol-sters, Bags and Clothing of Leather and Duck, Dealers who visit us will always find Job Lots.

166 Main St., CINCINNATI. B. KITTREDGE & CO.

BARNES' SAWS. Complete Outfits for Workshop Business.

Lathes for Wood or Metal, as

CHARLES E. LITTLE'S, 59 FULTON ST., NEW YORK.

Descriptive Catalogue Free,

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WASHINGTON STAMPING COMPANY.

HALL & ELTON'S GERMAN SILVER.



In addition to Spoons of this well-known brand, we are now prepared to furnish Forks of the same quality. We GUARANTEE these goods to be SOLID and of UNIFORM quality throughout, with no coatings to wear through or flake off, and with no liability to RUST.

HALL, ELTON & CO., Wallingford, Conn., and 47 East 13th St., New York.



The Most Perfect ALL CLAMP LEVER SKATE Ever Made.

NO TROUBLE IN ADJUSTING.

NEAT, SIMPLE, POWERFUL AND EFFECTIVE.

In its general use at the leading Rinks and Skating Lakes last season, it invariably received the highest testimonials of favor. Yet, notwithstanding these, we have improved some points, so there cannot now be a question as to its great superiority.

WE ALSO MAKE A COMPLETE LINE OF ALL OTHER KINDS OF SKATES.

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522, 524, 526, 528 and 530 West 20th Street. NEW YORK.

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BOILERS

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Prevents Radia-

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HEAT.

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Mechanical

For reducing to an impalpable powder all kinds of bard and brittle substances, such as QUARTZ, EMERY, CORUNDUM, GOLD AND SILVER ORES, BARYTES, COAL, OCHRE, MANGANESE IRON ORES.

PHOSPHATE ROCK, &c.

It is simple and not liable to get out of order, Revolving Shell being constructed of Siemenn Martin steel, and all parts mechanical in design and of first-class construction. Weight, 5,500 lbs., heaviest piece, 1,500 lbs. It will pulverize 7 to 10 TONS IN 10 HOURS with 30 H. P. For Circulars and full particulars, apply to or address

THOS. F. ROWLAND Sole Manufr, Brooklyn, N. Y.

BROWN, HOWARD IRON WORKS

SHIELDS

BRADLEYS INSULATED AIR

Awarded first and only Prize, Silver Medal, at the late National Railway Exposition. Send for Illustrated Pamphlet, and mention The Iron Age.

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GAS AND WATER PIPES.

BUFFALO, N. Y.,

YALE" and "STANDARD" LOCKS,

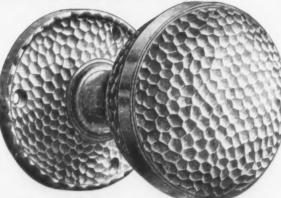
tion of

"HAMMERED" BRONZE FRONTS, KNOBS AND ESCUTCHEONS.

ALSO YALE "HAMMERED"

REAL BRONZE HARDWARE

CATALOGUES ON APPLICATION.



SOLE MAKERS,

THE YALE & TOWNE MFG. CO.,

PRINCIPAL OFFICE & WORKS, STAMFORD, CONN.

BRANCH OFFICES:

NEW YORK, 62 Reade Street. BOSTON, 224 Franklin Street. PHILADELPHIA, 507 Market St. OHICAGO, 64 Lake Street,

A New Milling Machine and Gear-Cutter.

The Cincinnati Screw and Tap Company, of Cincinnati, Ohio, are building a new milling machine and gear-cutter which presents some points of interest, as will be seen from our annexed engraving. The overhanging arm supporting the outer end of the live spindle is mounted in bearings, so that it may be moved longitudinally to accommodate the length of the cutter arbor. The date the length of the cutter arbor. The bearings also are so constructed as to firmly clamp it in position. The live spindle is hollow to admit a %-inch rod or bar for driving out the cutter arbors or live centers, as the case may be. The shaft for the vertical adjustment of the knee is placed at an angle of 45° to the center line through the table, thus bringing its operating handle in a convenient position. The dial for the vertical feed is graduated to hundredths of an inch, while one revolution gives ½ inch vertical motion to the knee. The rod for putting the automatic feed in or out of action runs along the front of the worktable, where it is readily accessible. The back head of the center has a revolving hollow steel spindle, with a thread on one end, to receive chucks, face-plates, &c., means, table, where it is readily accessible. The Dominion. Have we enjoyed, are we enjoyed have back head of the center has a revolving hollow steel spindle, with a thread on one end, to receive chucks, face-plates, &c., means, moreover, being provided to firmly lock timber and minerals, which are solely for the spindle. The table has a horizontal

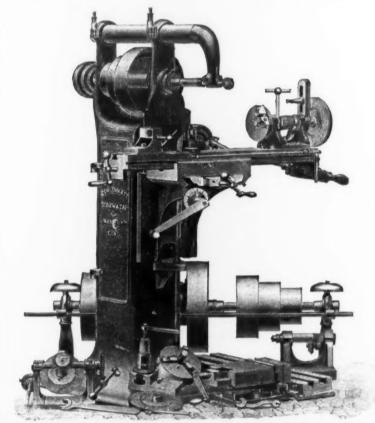
works comprise son including the new which will be caps tons of castings ever-shops are illuminated the engines which run nishing the necessary power

rent buildings. ust completed. ning out 3500 all the work-electric lights, anchinery fur-

Manitoba Grievances.

The Manitoba and Northwest Farmers' Union organized at Brandon on Nov. 26th, for the purpose of taking concerted action to secure the redress of grievances under which the settlers suffer. The following ex-tract from one of the speeches contains the substance of the discussion and reflects the feelings of the meeting:

"We have met together to make a solemn, united and vigorous protest against the highhanded policy of the Dominion Government toward this Province. When Manitoba entered the Confederation it was upon the condition that it should enjoy equal rights and privileges with every other member of the



New Milling Machine and Gear-Cutter.

motion of 14 inches, and is provided with is denied Manitoba alone. All she receives automatic feed stop motions. The vise can is a paltry subsidy, which is barely sufficient to pay a twentieth part of the cost of adbuilt, and will undoubtedly find a large field of usefulness.

Extinguishing Fires on Shipboard.— There has recently been invented a new method of detecting and extinguishing fires and preventing spontaneous combustion in ships. It consists of a system of communi-cation from the deck of the vessel with all the compartments of the ship, and with difby causing the gases generating in the hold to escape. The apparatus for carrying out to escape. The apparatus for carrying out the invention consists of a system of pipes extending throughout the ship in all direc-tions, branching from one inlet and outlet, and being perforated so as to discharge or re-ceive the vapors into and from any part of the ship. There is also a blower, contrived either for blowing in or exhausting from the pipe, connected with a reservoir to be charged with ages, for extinguishing the fire and with gas, for extinguishing the fire, and being so connected with the pipe that the gas may be forced into the ship. Judging from the manner in which this invention is applied to vessels, it will doubtless prove very effective in preventing the speed. from the manner in which this invention is applied to vessels, it will doubtless prove very effective in preventing the spread of many fires that now, through inability to detect them, result in the destruction of much valuable property. This system is also applicable to warehouses where the goods are so closely packed as to prevent free access to the different parts of the building.

The Grand Trunk Locomotive Works.

—The various buildings of the Grand Trunk
Locomotive Works cover an area of about 10 acres, being among the most extensive in Canada. Of the men employed 1115 are in the locomotive shops and 618 in the car shops, so that the total number at present is THE YALE LOCK MFG. CO., THE EMERY SCALE CO., THE WESTON CRANE CO.

THE YALE LOCK MFG. CO., THE EMERY SCALE CO., THE WESTON CRANE CO.

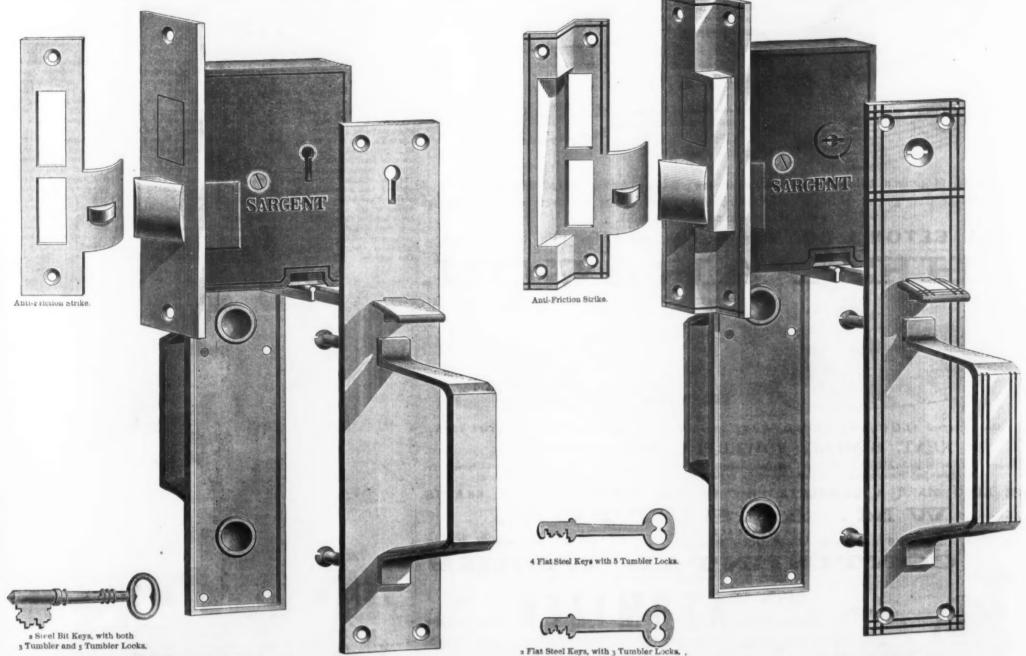
THE WESTON CRANE CO. work includes the building as well as the repair of locomotives, for the Grand Trunk have bought no locomotives since the time of the change of gauge, some 10 years ago. The works are capable of turning out 50 new locomotives overy year, and a repaired engine every day. Last year 42 new locomotives were built; this year the number of new locomotives turned out will be 30. The

rinch jaws, 1½ inches deep, opening 3½ inches. An extra attachment is made for cutting racks. A tool block and post may be mounted on the table and the machine used as a lathe. It is substantially and well if agricultural machinery is wanted in any If agricultural machinery is wanted in any part of the world, it is urgently needed here. Our paternal Government has taken advantage of our necessities to oppress us with an iniquitous imposition. What is the result? The struggling pioneers of this country are already on the verge of bankruptcy, if not utter ruin. Another form of torture inflicted upon us is the hideous railway monopoly, which is to bind us hand and foot for 20 years. The vetoing of the railway charter is one of the most shameful instances of tyranny ever imposed upon a free the compartments of the ship, and with different parts of the compartment, if necessary, by which air or gas may be either sent down into the compartments or brought out at will, thus enabling the detection of fire by the smell of the outgoing vapor, or by its appearance to the sight; and also the extinguishing of the fire by introducing cartinguishing of the fire by introducing cartinguishing of the fire by introducing carting in the logical preventing spontaneous combustion by causing the gases generating in the hold fail to see how we can be loyal to ourselves fail to see how we can be loyal to ourselves and them if we any longer submit to the arbitrary and despotic Government by which we are at present controlled. I do not wish to be misunderstood. I am no annexationist. and should be sorry to see Great Britain despoiled of any part of her provinces, but if the oppressive rule of Ottawa is to continue longer, I fear that the secession of this Province from the Dominion of Canada will be inevitable."

> four months of the past half-year, as compared with the corresponding period of 1882, amounted to the use of 37 engines per day, continuously, for each 24 hours. The total increase in the cost of locomotive power in the first half of 1883, as compared with the corresponding period of 1882, was £37,406, or 13½ per cent. As illustrative of the increased difficulties entailed by the greater ways of the minter it may be stated that severity of the winter, it may be stated that engines employed in working snow-plows and ice-breakers ran 58,021 miles, as compared with 5427 miles in the half-year ending June 30, 1882, showing an increase of about 970 per cent.

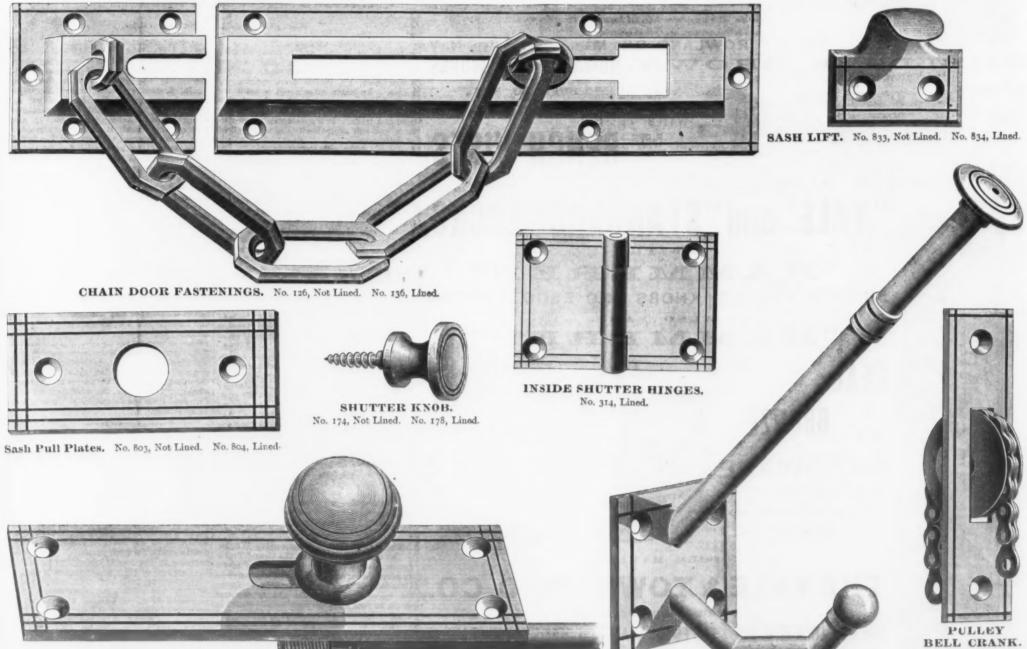
Cost of Locomotive Power.-The cost

HIGHLY POLISHED Bronze Metal or Brass HOUSE TRIMMINGS.



STORE DOOR HANDLES. Not Lined. Plain Front. Bit Keys.

STORE DOOR HANDLES. Lined. Rabbeted Front. Flat Keys.



MORTISE FLUSH BOLTS. No. 2108, Not Lined. No. 2109, Lined.

Coat and Hat Hooks No. 823, Not Lined. No. 826, Lined.

No. 23, Not Lined. No. 24, Lined.

Recent Improvements in Cowper Stoves.

Mr. Edward A. Cowper, in a paper read at the Middlesboro' meeting of the British fron and Steel Institute, says:

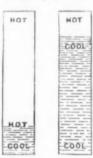
The late Mr. Neilson, by his admirable invention of heated blast for blast furnaces, effected a considerable improvement in the action of the furnace. He began with an increase of temperature of only 60° to 100° and finding the furnace work better, and an economy of fuel effected with even this small addition of heat, he raised his temperature gradually to 600° or 650°, with a continual decrease in the consumption of fuel for every increase of temperature. Pipe-stoves having since been considerably im-900° and sometimes 1000° F. is now reached, but at these temperatures the limit of the endurance of iron pipes has been reached, thus putting a stop to further economy with the old form of apparatus. For this reason further increase of temperature was not practicable, and this point was conprovement, however, the necessity for any sidered by some to be the natural limit to the temperature of the blast, although the maximum economy had by no means been attained. Now, although no ironmaster would deny the advantages that had been attained by hot blast (that is to say, of the temperature which he had himself reached), yet, when the invention of the fire-brick stoves offered the means of still further carrying out the same principle, opinions adverse to an additional increase were expressed. It has taken some years entirely to overcome such a prejudice, and to show that there is no natural limit except that of the temperature that can be attained by the combustion of the waste gases. economy does not suddenly stop at 1000° F., but continues to rise, in a steady curve, for some distance beyond this point, with every increase in the temperature of the blast, is not a matter of mere theory, but has been amply proved by extensive experience, as I will presently show.

he started in the first instance with fire-brick stoves, one would never have heard of 1000 being a natural limit to the temperature of the blast for a blast furnace. With good the blast for a blast furnace. With good fire-brick, instead of cast iron, as the material to withstand the heat of the flame, the waste gas from the top of the blast furnace may be allowed to burn freely and produce the highest temperature of which it is ca-pable, imparting its heat to the fire-brick surfaces of the regenerator without fear of damage, the regenerative system (first in-troduced in the Siemens furnace) enabling the heat so stored to be afterward taken up by the blast. As in the case of Neilson's first experiments, so with the early experi-ments with fire-brick stoves, the greatest advantage was not fully obtained at first, but the system was gradually developed by various improvements introduced from time to time. Thus the temperature of blast obtained by the Cowper stoves has been gradually raised to 1500° F., with the most

satisfactory results in economy of fuel and increase in the "make."
When I first began to contemplate improv ing the temperature of the hot blast, in 1857 a very common temperature in this district was between that of cutting lead and cutting zinc. Antimony, which I now use, had not been thought of. The late Mr. Vaughn took me down on an engine to Eston to show me what he was doing in the way of hot blast, and explained to me that he would not heat his stoves with gas for fear they should be ruined, but used a mild coal fire instead, while he would not allow the temperature to be raised above that of melting lead. We tried the temperature with lead, and it would not "cut" it, and Mr. Vaughan then told the man in charge that he might go to the temperature of cutting lead, but he would not have it touch that of zinc. I have mentioned that the Cowper stoves are based upon the principle of the regenerative furnace in troduced by Sir William Siemens, the original inventor being Mr. Fred Siemens. Thi This is now so generally understood that it is needless to enter into a long explanation of the regenerative action; would beg those who are not intimately acquainted with the subject to bear in mind that the regenerator is not simply a mass of brickwork, alternately heated and cooled but it is also a mass the top of which is always as hot as the gas flame can make it, and the bottom always cool, while between the two there is a zone of graduation, which is near the bottom when the stove has com pleted its turn on gas, and commences its duty of heating with blast, and near the top when its turn at the latter duty is completed. The appended diagram, Fig. 1, shows clearly uges that take place in the tempera ture of the regenerator. The smallest fire-brick stove ever made is the one that stands The smallest fire before you; it was only made for the table to explain the action of regenerative furnaces. The interior is only 6 inches in diameter, and the depth of the regenerator is only 12 inches. It is composed of a mass of clean, broken tobacco pipes. On heating it

versally adopted for pipe-stoves as well as for fire-brick stoves. Mr. James Young very land in the regenerator for three hours, and I have for a long time used bricks only 2 % inches thick, and some only 2 inches thick, for heating steam and gas for discilling purposes. A pair of small experimental stoves greater thickness as being safer in handling for one tuyere were put to work by Messrs. and knocking about. Cochrane at their works at Ormesby; thoy were heated by coal fires and gave a temperature of about 1200° F. These stoves perature of about 1200° F. These stoves where cylindrical, the whole area inside the gets thoroughly heated, as there is not time fre-brick lining being taken up by the re- or it, and then, when the cold blast enters from pipe stoves, there is always less gas and introduced into the boxes, and in order kept should the lamp be extinguished.

generator. The products of combustion. from a fire in a chamber below, passed up-ward through the regenerator and out through a chimney at the top. This first experiment was quite sufficient to prove that the plan was right, and a saving of fuel equal to about 5 per cent. was attained. In the first form of full sized stove constructed for heating by gas, a central circular tower or flame-flue acted as a combustion-chamber, and conveyed the products of combustion to the top, where they passed over into the surrounding regenerator, through which they descended. Various forms of regenerator-fillings were tried in the early stoves, the passages being made to break up the currents continually. Some choking oc-curred occasionally. At one time Messrs. Cochrane fired some stoves with gas from Siemens gas producers to avoid the dust then some large chambers containing a series of shelves to catch the dust were used, the gas passing through them on its way from



Recent Improvements in Cowper Stoves.—Fig. 1.-Diagram Illustrating Changes of Temperature in Regenerator.

I should here mention that my friend Mr. Such apparatus has entirely been done away with. In the early stoves the hight of the regenerator was very small, and the blast as far as was practicable and convenient, and I venture to assert that here which took place, the air and gas being compelled to take a tortuous course. The bricks were in some cases only 114 inches apart, and there was some liability to choking by the dust. Further experience showed it to be better to make the stoves considerably higher and with larger passages. I may add that Cochrane & Co. early appreciated the ad-vantages of the stoves, and have applied them with great energy.

Although it is my intention to adhere

strictly to the subject of this paper, I may mention that in 1865, or seven years after I



Fig. 2. - Section of Brick.

had introduced my invention, my friend, the late Mr. Thomas Whitwell, explained to me the modification of my invention which he wished to be allowed to apply. I therefore granted him a license, and all stoves that he erected up to 1871 were made under a royalty. Mr. Whitwell at first intended to make the stoves square or oblong, but I persuaded him to make them round, as being far stronger and cheaper. The "box plan," which is a peculiar arrangement of split brick set on edge, was then adopted, each course of each passage being, in fact, a square box formed of four bricks. These passages reached from top to bottom, so that a brush or chain could be passed down if required, while the arrangement of the bricks was such that, though standing on edge, they could not fall over or get out of place, on account of the support which they derived from each other, as each brick had, in fact, through two other bricks as buttresses to it. These tor.

at the bottom of the stove, and in rising has become warm and then hot, and should have the highest temperature given to it at the pper part of the stove, it finds some of the eat that was deposited on the surface of the brick then soaki g in, or, more properly speaking, being conducted into the heart of the fire-brick, thus not giving the highest temperature to the blast. The same thing takes place in the reverse order when the stove has become partly cooled and the products of combustion are passing through and heating up the stove; some of the heat from the inside or heart of the fire-brick comes out if it is thick and the products of combustion are not properly cooled down, and heat is thus lost. Three inches of firebrick is certainly a greater thickness than is necessary. I would here venture one word of caution as to the mode of registering the temperature of the blast in pipe stoves and in Cowper stoves respectively. The tempera-ture ought always to be taken with the copper ball and pint of water (Siemens's pyrom eter), as that is the only accurate way know of under the varying circumstances of difference in the temperature of the air in a tuyere-house. Hobson's pyrometer is a very handy instrument for rough observation, but it is easy to deceive oneself, and I know that people have deceived themselves by not considering how much hotter the air in a tuyere-house is on a very calm day, or on the leeward side of a furnace, than what it is on a cool day, or on the windward side; and as the air that enters the instrument ought to be cold, or at the ordinary tempera ture of the atmosphere, a large quantity of hot air entering the instrument makes the reading of the temperature of the blast far too high or much higher than it really is

I have, however, now arranged a brick of

very strong form, only 2 inches thick (shown in Fig. 2), and so shaped that one brick makes three separate pas-ages of 6-inch or 7-inch hexagons with slightly-rounded cor-ners, so that, although the bricks cost rather more, there are not nearly so many used.
As they can be pressed out with a common steam drain-pipe press," and cut off to ength, I shall soon get them made very ength, I shall cheaply, and thus have their sides to the passages, and passages of any size I may wish. They may be built up to any hight in a stove, and make excellent work when se dry, so that no straining of the wroughtiron casings can take place. Of course, it will be seen at once that both sides of every Of course, it 2 inches of thickness are heated, so that th heat has only to penetrate I inch from the surface in order to heat the whole. I call this "honeycomb filling." Fig. 3 shows a section of a stove through the flame-flue, regenerator and chimney-valve, the arrows indicating the direction of the draft through the stove when being heated by the corabus-tion of gas. The regenerator occupies the whole of the space outside the circular flamewhole of the space outside the circular name-flue, but parts are removed to show the con-struction of the grids, girders and piers car-rying the regenerator. Some of my stoves in America have bricks made in the form of solid hexagons with a round hole in the middle, but when these hexagons are put together the heat never gets to the outside of the bricks at all, so that there is much more that one-half the whole surface lost as heating surface. With a view to increase the power of the stove, I am now arranging to draw off the products of combustion from several points opposite to the circular flame-flue, which is placed opposite the chimney-valve, so that the distances through the various parts of the regenerator are, as near as may be, always the same, thus causing a more perfect distribution of the products of combustion in going out, and of the cold blast in coming in, the power of the stove being in this way somewhat increased.

Another recent improvement is in the burner for the gas, which is placed in the bottom of the circular flame-flue.

I find, from numerous experiments made with gas flames of various forms, that the greatest quantity of heat is produced, and the best and hottest flame obtained, when the best and hottest flame obtained, when the gas is properly burned at one place, and is kept well together as one solid flame. It then turns over under the dome, and dis-tributes itself in the best possible manner throughout the whole area of the regenera-tor. The burner is formed either as a regu-

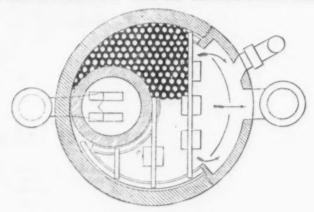


Fig. 3. - Sectional View of Stove.

for three hours with a gas flame, the top became just milk warm, and yet when cold blast was turned in at the top it cut lead well as it issued as hot blast at the bottom, having only traversed a regenerator 12 inches deep, as just stated. This thoroughly passing through each passage, but this has proves how perfectly a regenerator works been found to be unnecessary. The specific assages were at first built with the bricks lar Argand burner, with the air up the proves how perfectly a regenerator works been found to be unnecessary. The specific when heated at one end and cooled at the heat of fire-brick is so high, being about when heated at one end and cooled at the other by the introduction of cold blast.

The stoves are constructed of wrought iron to retain the pressure of the blast, with a lining of fire-brick to retain the heat and protect the plating. I may add that I also invented, about the same time, the wroughtiron pipes lined with fire-brick for conveying the blast, which have since been so unit the whole of the heat passing the blast, which have since been so unit. blast, which have since been so uni- terial to take up the whole of the heat pass

middle and the gas up the outside, or versa; or, as in other cases, there are two or three large slits in the brickwork at the bottom of the flame-flue for the gas to ascend vertically in two or three flat sheets of streams, which are protected from the horizontal force of the incoming air by small piers or walls in front of the gas-slits, and then the air is admitted horizontally, so as to strike into the circular flame flue outside the sheets of gas and between them, thus presenting several large surfaces of gas and air in contact and in active motion for mixing and combustion of the best possible character. So perfect is the combustion that on a care ful analysis of the products of combustion indly made by direction of my friend Mr. Windsor Richards) there was only found to be 13 per cent. of free or surplus oxygen thus showing that the best possible use had been made of the gas. Of course, under these circumstances it is not to be wondered

used by these stoves than by pipe stoves. With regard to the saving of fuel and increased "make," I may say that, generally speaking, the Cowper stoves save about 20 per cent. of fuel per ton of iron and increase the "make" about 20 per cent.; but in order to give as precise a result as to fuel which I have returns, and I find it to amount to a little over 5 cwt. of coke per ton of

In furnaces using raw coal, 71/2 cwt. has een saved. In all cases the iron is rather better, being more inclined to "gray," owing to the extra heat acting as so much extra uel. Thus 3/to 4/per ton extra profit may e made upon all the iron produced, even at fuel. the present very low prices, and this, of course, is of more importance now than it would be when large profits are being made under a high range of prices. There are now about 360 stoves at work in Europe and America, and more are constantly being put up. I have attempted to make some sort of calculation as to the annual saving to the ron trade of the world which has accrued from the adoption of the Cowper stoves, and, inasmuch as the stoves pay for themselves generally in about nine months, though oceasionally it may require 10 or 11 months for an ironmaster to recoup himself. I am quite safe in taking 12 months as sufficient time to replace the outlay, and as there has now been about £460,000 expended in Cowper stoves, it follows that that is about the annual saving reaped by those ironmasters who have adopted them. The stoves have been erected in England, Scotland, Wales, France, Germany, Switzerland, Russia and America, while China and New Zealand are likely soon to be added to the list.

SCIENTIFIC AND TECHNICAL.

Artificial Ivory.

The Chronique Industrielle, of recent date, published an account of a new method of making artificial ivory from bones and scraps of white sheepskin. The bones are first soaked from 10 to 15 days in a solution of chloride of lime, after which they are washed in water and dried; they are then mixed with the scraps of white leather, put in a large kettle and boiled, forming a con-glomerate mass of the whole, to which is added 2½ per cent. of alum. As fast as any scum or froth rises to the top it is skimmed off, the boiling being continued until the liquid clarifies. The proper coloring matter is now added and the boiling stopped. The liquid, which has now partially cooled, is strained through a cloth into a cooler, where it is left until it has hardened to such a degree that it will not pass through the meshes of the cloth. The mass is then further dried upon frames, after which it is hardened by placing in a cold alum bath for 8 or 10 hours. The total amount of alum required in the process is equal to one-half the weight of the of the finished ivory. The ivory, when taken from the alum bath, is washed in elear water and allowed to dry in the air. It is said that this artificial product is easily worked, and takes as high a polish as real

Manufacture of White Lead

Some important improvements in connec tion with the manufacture of white lead have recently been patented in England. The invention consists in using boxes of from 5 to 20 feet long, from 5 to 6 feet wide and ½ feet high, filled with lead in the form of vire or fine filaments and subacet te of lead, into which carbonic acid is introduced. The carbonic acid is produced in an oven or fur nace, and is drawn through water to purify it and remove dust and ashes, and thence forced into the solution in the box. The The interior of the box is divided into three or four compartments by deal boards extending about half way from the top to the center, leaving the lower half of the box free, so as to form an uninterrupted space. To prevent the lead wire from packing together at the bottom of the box, it is necessary to fill the box with a series of laths to keep the wires in a suspended position and always exposed 3 or 4 inches higher, and according to the hight of the box a third row, filling it with a kind of network, to expose every piece of lead to the carbonic acid, at the same time permitting its free passage through the box, nd preventing the lead wires from settling t the bottom of the box and there packing together with white lead to a solid mass, accumulating more and more, to endanger and interrupt the whole process. At one end of the box are taps to let the lead, &c., run off into a receiving tank below the box, so that, in case of a stoppage of the oscillat-ing motion of the box occasioned by a sudden break or by the slipping of a belt, there is no time lost in emptying the boxes. The white lead, which is kept floating in the acetate of

pening is made in one end of the cover of ne box, and for the exit of nitrogen other kinds of gas a similar opening of about inches wide is made in the other end of the over; these openings are by means of rubher hose connected, the one with the blower and the other to a spout leading to the outside of the building. The oven is connected, by means of pipes of sheet iron 7 inches to 8 inches in diameter, with a cask filled from two-thirds to three-fourths full of water; the pipes for the purpose of the building. The oven is connected, by means of pipes of sheet iron 7 inches to 8 inches in diameter, with a cask filled from two-thirds to three-fourths full of water; the pipes for the oven reach so for down in the oven reach so for down in the oven the oven reach so for down in the oven the oven reach so for down in the oven the oven reach so for down in the oven the oven the oven reach so for down in the oven the oven the oven reach so for down in the oven the o pipes from the oven reach so far down in the ask that they go into the water about 2 or inches, so that the carbonic acid, in passing through the water, is washed and purified. Another pipe of similar size connects the cask with the blower. This pipe is of copper or such other material as will not discolor the white lead, and is connected to the head of the cask, so as not to come in contact with the water inside. By the constant influx of

to prevent this a constant stream of cold water has to flow in; the blower or the air pump will, however, create a vacuum above the water which will prevent the hot water from running out unless the suction occa-sioned by the blower is counterbalanced by the weight of the water, for which reason it saved as I possibly can, I have taken an is necessary to have pipes of lead inserted exact average of all stoves (over 100) of into the cask near the bottom, which may be raised in the shape of a goose-neck just so high that, the blower being in operation, the hot water will run off at the same rate as the cold aterenters, and so keep the hight of water inside the cask constantly the same. A water gauge may be attached to the cask to show the hight of the water inside at any given time.

To fill the boxes with the lead, wire open ngs are left in the covers arranged in such a way that the box can be hermetically closed. An india-rubber hose connects the box with a vessel containing basic or subacetate of lead, by means of which the boxes may be filled with this liquid. In order to be able to see how far the boxes are filled with the subacetate of lead a small test cock or gauge is inserted into one end. The beams under the box are provided with two shafts let-into the wood, fitt ng into cast-iron bearing, which rest on strong timber. The shafts which rest on strong timber. The shafts ought to be pieces of 2 to 21/2 inches square wrought iron and 2 feet long, rounded off in the middle to fit into low cast-iron bearings or pedestals about I foot long, 4 inches wide and 3 inches high, with an opening to fit the shaft. The apparatus being ready, the boxes The apparatus being ready, the boxes are loosely filled with fine blaments or wires of lead, then set in motion; white subacetate of lead and carbonic acid are introduced until there is so much of subacetate of lead in the box that the cover of the box is washed on the under side. The introduction of carbonic acid is continued until a sample taken from acid is continued until a sample taken from the test cocks will make blue litmus paper red. The contents of the box are then emptied into a receiving vessel, and another quantity of subacetate introduced into the box, and so continued. The white lead is then separated from the liquid, which, con-sisting of a neutral acetate of lead, is made hasic accinetes be used in this way over and basic again, to be used in this way over and over again, while a small quantity of acetic acid is added to replace any acid which may be lost by evaporation or otherwise.

A New Insulating Material.

According to an account in Engineering, Mr. E. T. Truman, of London, England, has brought out a new insulating material, consisting essentially of plumbago, or black lead. mixed with gutta-percha, india rubber or ozokerit. When the gutta-percha is of poor quality the proportions are 50 parts of guttapercha and 30 parts of graphite; but the petter the gutta-percha the greater the proportion of graphite which can be used up to 50 per cent. The graphite, which must be very dry, helps, according to Mr. Truman, to preserve the gutta-percha. The black lead is chosen for its high insulation in the first place, then is carefully sifted, dried and mixed with the gutta-percha in a masticator or condenser. The resulting insulator is applied to wires by the ordinary machines for overing. Ozokerit may also be mixed with the compound in small proportion. A black lead surface of a protective character is also given to gutta-percha wires by Mr. Truman, and its lubricating surface assists in the manipulation of the wires in pipes.

The Use of Lime Cartridges in Coal Mines.

At the meeting of the Manchester Geological Society, on November 13, a paper was read on the use of lime cartridges in coal mines, which described the process that had been adopted by Messrs. Smith & Moore, at their Shepley Colleries, Derbyshire, where the use of powder had been prohibited after a disastrous explosion in their mine. The great cost of wedging the coal induced Messrs. Smith & Moore to experiment with the view of utilizing the expansive power of lime as an efficient agent for breaking down coal, and the result had been most successful. They had been enabled to secure absolute immunity from danger of explosion of gas; greater safety in the working places, as it was unnecessary for the workmen to retire while the charges were being exin a suspended position and always exposed to the action of carbonic acid or acetate of lead. A row of laths, 2 inches square, is placed crosswise in the box, about 2 or 3 inches from the bottom, and about ½ inch apart, so as to leave free vent for the white the coal by wedges, but avoided the numer lead to run off, but to keep the lead wires in ous accidents consequent upon their use. lead to run off, but to keep the lead wires in ous accidents consequent upon their use. place. A second row of laths is then placed In the manufacture of the cartridges nearly pure carbonate of lime was used; compressed by hydraulic power, and the die in which the cartridges were formed was 2½ inches in diameter and 7 inches in depth. A pressure of 40 tons was applied simulta-neously at both ends of the column, which was reduced from 7 inches to 4½ inches in length. The cartridge was then wrapped in paper, and was ready for use in the mine. For drilling the holes in which the cartridges were placed, a light boring machine was used, the holes varying according to the hardness of the coal, the average depth of the holes being 3 feet 6 inches, and the distance apart 4 feet 6 inches. The drilling occupied from 12 to 20 minutes, and the carridges were then placed in the back of the hole, groove upperlead, which is kept floating in the acctance of lead, which is kept floating i forced in by means of a small hand-pun.p. The generation of steam and expansion of the lime commenced almost immediately after the water reached the cartridges, and the time taken by the lime to bring down the coal varied, according to the hardness and position of the seam, from 15 minutes to three-quarters of an hour. It had been

> ome useful applications have lately been made in England of luminous paint where it is desirable to render objects visible in the dark, such as life and mooring buoys, numbers of vessels, dangerous rocks and heedlands, a large rock having recently been painted. Perhaps the most striking applica-tion is the painting of the mariner's compass

WHOLESALE METAL PRICES, December 5, 1883.

METALS.

IRONDury: Bars, 8-10g to 11-10g 費 助; pro- uded that no Bar Iron shall pay a less rate of duty than 35%. Sheet, 11-0g to 15-10g 費 助. Band, Hoop and Scroll. ig to 14-10g 費 助. Railroad Bars weigh- ing more than 25 助 資 yard, 7-10g of ig 費 助.
American Iron.
Foundry No. 1
Scotch Iron.
Carnbroe
Old Rails, Ts ton 22.00 @ 22.50
Scrap.
Wrought, \$\pi\$ ton, from ship and yard. 22.00 @ 24.00
Bar Iron from Store. Common Iron: % to 1 in. round and square % to 1 in. s% to 1 in

34 to 2 in. round and square 9 5 2.20 @ 2.30¢
1 to 6 in via and 5-10 9 % 2.40 @ 2.50c
Rods—36 and 11-15 round and sq. 9 D 2.80 @ 2.40¢ Bands—1 to 6x3-16 to No. 12 9 D 2.60 @ 2.70¢
Pands 1 to 6 st 16 to No 19 19 70 9 60 @ 2 70¢
Bands-1 to 023-10 to No. 12.
"Burden's Best" Iron, base price 10 8.86
Ulster Iron, base price 📦 🗈 3.7¢
Norway Nail Rods
Sheet Iron.
Common R. G.
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Galvanized, 25	to 26		192 17	0 8 ¢	7 ¢
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Galvanized, 28			W II	9 6	8 ¢
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Russia	******			P D 13¢	@ 140
American Cold	Rolled	B. B.		8 D	@ 736¢
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7¢ and not ab	ove 10¢	TO.	2340 B	D; VA	lued above

7¢ and not above 10¢ % එ. 2½¢ % b; valued above 10¢ ₩ ħ, 3½¢ ℀ Ђ. Extras.—Steel Bars, Rods, &c., cold hammered or polished, in any way in addition to ordinary hot rolling, 1½¢ ℀ ⊅ in addition to obve; Steel Circular Saw Plates, 1¢ ℀ ⊅ in addition to the above. American Cast Steel.
For American Steel, see Pittsburgh qu

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I C 12x12		
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I C 20x28, 112 sheets	**********	10.78
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Plating extra
Bottoms, cut to special sizes. " @ \$6 ¢
Tinning.
14x48, by the case
For tinning both sides, double the above amount.
O'Neill's Patent Planished CopperNet. (
12 and 16 oz. and heavier 35¢ By the case. \$ 78 84¢
12 oz. and lighter 38¢ " " 37¢

14x48
12 and 16 oz. and heavier 35¢ By the case ≥ 70 34¢
12 oz. and lighter 38¢ " " " 37¢
Boiler Sizes.
7 in., 14x52. 8 in., 14x56. 9 in., 14x60.
14 and 16 oz. and heavier 37¢ By the case. ≥ 10 36¢
(And all sizes not over 20 in. wide.)
14 and 16 oz. and heavier
12 oz 42¢

Copper Wire,—(See Wire.) Sheathing Metal.

BRASS AND GERMAN SILVER. rown & Sharpe's Gauge the Standard for Metal; Old English Gauge the Standard for Wire, BRASS MASUFACTURERS' PRICE LIST.—Dis. 25 ≤

For less quantity than 100 %, add 3c & %.
High Brass.
All Nos. not thinner than No. 28, wider than 2
in., not wider than 11 in
All Nos. to No. 28, inclusive, and widths over 14
to 20 in., inclusive
All Nos. to No. 23, inclusive, and widths over 20
to 30 in., inclusive

to 30 in inclusive
140 P h advance on each No. above Nos. 28 to 38,
inclusive.
All Brass thinner than No. 38 is Platers' Brass, at 53¢
Sheets 24x48 in . and all sheets cut to particular
sizes and lengths under 30 in., in width wider
than Vin

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Brass Pail Ears
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- 1	Acid, Sulphuric, 66°	44	
- 1	Rouge, hard and soft, for Nickel		
1	Ammonia Water, 26° U. S. P	0.6	
- 1	Potassa Caustic, pure white	6.6	
- 1	The state of the s		

ANTIMONY.

Cookson 1114 @ 12 ¢
SPELTER—Duty : Pigs, Bars and Plates, \$1.50 ≥ 100 lbs.
American, cash 494¢ @ 514¢
Z1NC—Duty: Pig or Block, \$1.50 \$100 lbs. Sheet, 256 \$10. 600 D casks
Office of Office belongs This Office
Plain
Plain
BARRITT METAL.

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Flat, Square and	Half-Round	Wire, 5	e W B ad-	
Fancy Wire, not k Round Wire.	ess than 10s	W B a	dvance on	
Brass Rods, No. 8 a lengths, 28¢.	and larger, p	ot less	than 2 ft.	
Wire straightened			han No. 8	

lengths.	286.
	straightened and cut, smaller than No. 8,
and not	less than 2 ft. lengths, 43¢.
	and Rods less than 2 ft. lengths, special
rates.	
	e cents & B extra for spooling on 1 B spools
to No. 3	5.

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15¢ 17¢	MISCELLANEOUS Sol	TIN der.	NER	s, st	оск
50¢ 40¢ 45¢ 45¢ 55¢	14 & 1/2, Warranted Extra No. 1 Refined No. 2				13 9
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18¢ 11¢ 1¢ 2¢	Prices current p	1881 11 56¢ Bolt 188. er box	12 18 58¢ 60 m.	d 3 14 ∌ 65¢ d d	is. 40 % is. 50 % 15 70¢ is. 50 % is. 45 %
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18,	Sizes.	1st.	2d.	8d .	4th.
	6 x 8 to 10 x 15	\$18.50	\$11.50	\$10.75	\$10.25
_	11 x 14 to 16 x 24			12.50	11.50
15,	18 x 22 to 20 x 30	18,50	17.00	15.50	14.00
	15 x 36 to 24 x 30				
	26 x 28 to 24 x 36				
48	26 x 36 to 26 x 44				
58	26 x 46 to 30 x 50	26.00	24.00	20.50	

36 x 60 to 40 x 60				
Dou	ible.			
Sizes.	1st.	2d.	8d.	4th.
6 x 8 to 10 x 15				
11 x 14 to 16 x 24				
15 x 36 to 24 x 30				
26 x 28 to 24 x 36	29.00	26.00	28.00	
26 x 36 to 26 x 44				
26 x 46 to 30 x 50	88,00	31.00	27.00	
90 x 52 to 80 x 54	35,00			
80 x 56 to 84 x 56	87.00			
84 x 58 to 84 x 60		87.00		
86 x 60 to 40 x 60	48.00	40.00	87.00	

Sizes above—\$15 per box extra for every 5 inches. An additional 10 per cent. will be chared for all lass more than 40 inches wide. All sizes above \$2 ches in length, and not making more than 81 nited inches, will be charged in the united 84 ount, 60 and 15 to 60 and 20

PAPER STOCK, &c.

	Cents	PB.
White Shirt Cuttings, No. 1	7 66	736
" No. 2	136 6	6
Mill Assorted Whites	134 60	414
Unbleached Muslims	612 @	667
City Whites No. 2	416 (2)	-82
City Whites, No. 1. New Canton Flannels	478 00	275
New Canton Flannels	21/0	058
New Seconds, light	325 9	329
dark	274 68	3,
No. 2 Whites	275 to	276
Cotton Canvas	479 68	474
Linen Canvas No. 1	424 10	429
Seconds, City No. 1	176 (8	194
Seconds, City No. 2	1 @	X56
Colors, # cwt	90 6	90
Manila Rope	326 @	356
" Tarred	236 @	294
Gunny Bagging No. 1	196 6	3
A No. 2	130 @	194
Kentucky Bazging	4 6	
Burlap Bagging No. 1	214 68	236
Tar Shakings	196 68	2
Hemp Twine Stock	434 18	416
Hard White Shavings, No. 1	4 6	
Soft White Shavings, No. 1	234 68	934
White Shavings, No. 2, Soft	63	3
White Shavings, No. 2, Soft	216 @	9
Ledger and Writing	2.0	214
Bolid Stock	-02 CB	212
Book Stock, No. 1, light	1 0	114
Old Newspapers	1140	162
Pure Manilas	197 6	274
Bogus Manilas and Hardwares	67.00	1 1
Commons, per 100 lbs	60 60	00
Dindows Board Cuttings	2/ (2)	70
Binders' Board Cuttings	28 (8	1
Straw Board Cuttings, F cwt 7	0 68	75

PAINTS, OILS, &c. Paints.

" Ordinary	1
" Ivory Drop, fair	
Bue, Prussian, fair to best	1
" Chinese dry	
Brown Spanish	
" Van Dyke 10 @ 120 Green Chrome	lore
" in oil	141
" in oilgood, see; best, asc	- MI
Iron Paint, Bright red	
" Purple " 30	0000
Ground in oil, Bright Red 65cc Red	0.00
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" Purple " 6c	
Mineral Paints	
Red Lead, American	1 : 1
" Venetian (Eng.) dry	::::
" Indian dry 9 @ 120	1. VOV.
Rose Pink	2000
Sienna. American Raw, powdered	X
" In oll	XXXX
Umber, Burnt, powdered	
" in oil	×2-7
Raw, powdered	e p
Vermillion Chinese.	9: : :
English	E
White Lead, American, pure dry	P
" in oil	2
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" in oil	- 24 50 50
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" French (Paris dry)8 @ 100	
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	Asphaltum, Cuban 65g a 95g
	" Egyptian 9 6 10
	Bensine #gal 8 @ 10
1	Chalk
ı	Dryers, Patent, Am'nass't cans oc ; keg,
4	Frostings
1	Glue, White24 @
1	14 Bheet
1	Glasiers' Points, Zinc
1	Gum, Copal36
ı	00 Damar29
1	" Shellac, English
ı	10 (1 dark
J	Litharge75
ĺ	Mineral Wool, ordinary, per lb 1 66 154
ł	" extra
ı	Pumice Stone, selected Lumps 4 6 5
ŧ	" powdered2%
ĭ	Pine Tar, bbls \$5.00
I	Pitch
ł	Putty, in bladders
ı	" in bulk
١	
ľ	E & F

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OAK, ASH, &c.

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Our Stock is now complete and ample. Price list sent on application.

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Jarecki's Screw Plate and Pipe Cutter.



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RHODE ISLAND HORSE SHOE CO.,

Horse, Mule & Snow Shoes of the Perkins Pattern. Office, 31 Exchange Place, Providence, R. I. Works at Valley Falls, R. I. C. H. PERKINS, Gen'l Manager. R. W COMSTOCK Secretary

PHILADELPHIA

Elizabethport Steam Cordage Co., MANUFACTURERS OF MANILA, SISAL AND TARRED

CORDAGE OF ALL KINDS. BINDER TWINE A SPECIALTY.

46 South Street, New York.

METALLURGICAL NOTES.

Extracting Cobalt and Manganese from Their Ores.

A new process for extracting cobalt and manganese from their ores has recently been patented in England, and consists in the use of sulphate of iron for the purpose of extract-ing the oxides of cobalt and manganese from their ores in the form of sulphates, in which form they are easily converted into old and well-known processes. The theory of this process is to decompose the sulphate of iron in the presence of the ores containing the oxides of cobalt and manganese, so that it shall be converted into oxide of iron, and the oxides of cobalt and manganese into sulphates, in which condition the sulphates are washed out and reconverted into oxides. In practice the following method is pre-ferred: The ore must first be crushed very fine, mixed with water to a soft paste, and its percentage of oxides of cobalt and manganese ascertained. A sufficient quantity of sulphate of iron is then added to convert the oxides into sulphates. In this condition it is boiled for half an hour, by which time the whole of the oxides will have been converted into sulphates and held in solution by the liquor in which the slime has been boiled. This solution is therefore decanted, and the thick residue of all remaining solution is vashed, so as to remove all trace of sulphates, and the solutions are then treated with any of the well known materials for reconverting the sulphates into oxides. If the slime is put into cold water and allowed to remain there, say, for 24 hours, the most of the oxides will have been converted into sulphates, but this makes the process tedious, and is not so efficacious as when the slime is boiled. Instead of boiling the sulphate of iron in the shape of a salt, it may be mixed with the dry crushed ore and heated in a furnace until the double composition above referred to has taken place. These sulphates may then be washed out with cold water and precipitated in the form of oxides, as before.

A new form of ingot mold has been devised by Mr. Samuel Rideal, of Manchester, England, for which great advantages are claimed. The invention consists in employing ingot molds having an outer casing of metal and an inner shell of refractory material, with an annular space between the two filled with non-conducting materials. The outer casing is made either taper or parallel in form, open top and bottom and of cast or rolled metal, preferably of plates rolled of mild steel in two or more parts. To the mild steel in two or more parts. To the lower edges of the casing are riveted bars of metal of angle section which project inside, and upon which stand the inner shell. To the upper edges of the casing steel. the upper edges of the casing are attached loop rings to enable the molds to be lifted and removed as required. The inner shell of the size and form of the ingots required, is made of magnesium limestone, old fire-bricks and coke, each being exposed to a high tem-perature, afterward reduced to a suitable fineness, mixed with mineral oil to a stiff paste, and rammed or forced into molds of metal to the form required; the shells are then dried and gradually heated to a bright redness. Around the outside of the shells bands of thin metal are placed at short distances apart, which expand and contract with the shells when in use, and admit of their being removed without injury. The inner shell being thus prepared, is placed inside the outer casing, its lower edge resting upon the angle bars, and the annular space filled with some porous non-conducting material, the inner surfaces of the shells being protected by a wash of ground plumbago and water before being filled with molten metal. Ingot molds of something like the form described above—that is, of thin metal, claimed, makes the metallic seat or metallic lined with refractory material-are by no means a new invention, but, thus far, all trials of them have been unsatisfactory. Whether this mold of Mr. Rideal's will prove a success remains to be determined.

Railroads in Venezuela.-The first railroad built and operated in Venezuela began at Puerto Cabello and led to the westward. About 10 miles were built and operated, but embarrassment followed, and nothing is now to be seen except a dim outline of the road bed. About the year 1870 an English company built a 2-foot gauge road from Tucacas Poisonous reptiles, wild animals, mamiles. laria and dense jungles combined to obstruct the building of the road. The largest bridge has a span of 90 feet. The ties, bridges and even the telegraph poles are of iron. The road for its last 5 miles has a grade of 600 feet, requiring specially constructed engines. The freight cars carry from 5 to 6 tons, and the passenger cars about 30 passengers. A road from La Guira to Caracas, a distance of 22 miles, has been in process of construction for several years. The track of the road is 3½-foot gauge. It is built on a series of reverse curves, having a radius of 140 feet. Surveys have been made for other lines, and a small amount of grading has been done on a road 40 miles long, from Puerto Cabello to Valencia

Metallizing Wood .- A French journa thus describes a process for metallizing wood: "The wood is first immersed for three or four days, according to its permea-bility, in a caustic alkaline lye (calcareous soda), at a temperature of from 170° to 200° F. From thence it passes immediately into a bath of hydrosulphite of calcium, to which is added, after 24 or 36 hours, a comcentrated solution of sulphur in caustic pot The duration of this bath is about 48 hours, and its temperature is from 90° 120°. Finally, the wood is immersed for 30 or 50 hours in a hot solution (90° to 120°) of acetate of lead." This process, as may be seen, is a long one, but the results are sur-prising. The wood thus prepared, after having undergone a proper drying at a mod crate temperature, acquires under a burhaving undergone a proper drying at a mod erate temperature, acquires under a burnisher of hardwood a polished surface, and assumes a very brilliant metallic luster. This luster is still further increased if the surface of the wood be first rubbed with ai piece of lead, tin or zinc, and be afterward polished with a glass or porcelain burnisher.

gives an output of 442e tons per month. The open-hearth plant contains six 5-ton Siemens, and ordinary care taken in preserving it. It is devoted to the indicator and its attachments, and forms a very neat little making low-carbon steel. Anthracite coal surface of the wood be first rubbed with a piece of lead, tin or zinc, and be afterward polished with a glass or porcelain burnisher.

The wood thus assumes the appearance of a true metallic mirror, and is very solid and resistant

Pratt's Straightway Swinging Check Valve.

The difficulties attending the use of the ordinary check valves and the numerous ailments to which they are subject are too well understood by mechanics to need particular mention. They are known and appreciated wherever such valves are used, and do not need attention in describing a new form of valve which avoids them. This valve is shown in the accompanying illustrations. It is known as Pratt's Patent Straightway Swinging Check Valve, and is manufactured by the Pratt & Cady Company, of Hartford, Conn. The valve belongs to the class of swinging valves, and its seat is placed at an angle of The peculiar feature of the valve itself is that it is hung from a yoke which allows it to rotate freely on its seat, and by means of an opening, closed by a plug at right angles to the seat, it can always be ground in place by using a screw-driver, without the necessity of breaking the joints or connections. This feature enables the valve to be ground in place and rust or sediment on the seat to be removed as soon as discovered, it being merely a few seconds' work to remove the plug. The valve itself and yoke may be removed at any time by taking off a cap over it. The parts being can be slipped in place in case corrosion or of weight of hammer, while the "crank the disk tight. Even this coefficient of the coefficient has made it impossible to grind lift" hammers gave 15 feet weight of the coefficient has made it impossible to grind lift. an accident has made it impossible to grind the disk tight. Even this operation of repound of hammer. The efficiencies of the It consists of three parts. The caps are

are consumed daily. The pig iron used is mostly English. The rail mills are of the Belgian type, two-high reversing. They roll the rails 90 feet, for three lengths of 30 feet each, and turn out on an average 550 ingots per day. The rolling plant consists of one universal mill, one plate mill, two small mills and one bar mill. A new wire mill is nearly ready for use, which will produce over 32 tons per day. A large steam hammer is also being put in. There are large bridge, machine and molding shops. The smiths' shop contains 100 fires and employs the same number of smiths. Altogether, the firm employ about 9000 men.

TRADE PUBLICATIONS.

Tests of Drop Hammers.

We have just received a report of some in-teresting tests made for the Stiles & Parker Press Company, of Middletown, Conn., by Prof. R. H. Thurston. The tests were made "friction roll drop" hammer and a on their crank lift drop" hammer, both kinds of hammer being in use at the works of Strieby & Ward, of Newark. Two hammers of each class were used, weighing 900 and 300 pounds each, the drop being 28 inches. The gauges used in measuring the work done by the hammers were cylinders of pure mer-chant copper, varying from % to 11/4 inches in diameter, and from 11/4 to 21/2 inches in length. The results of the test showed that the drop hammers performed respectively

table and rule are given at length. This, as our readers who have seen the article in Mechanics know, gives a short method for the calculation from a card of the steam consumption for horse-power. Mr. Brown's drum-spring testing apparatus is illustrated, and a very good description given. A new locomotive revolution counter is shown, of which very good reports come to hand. As this has a convenient starting and stopping apparatus, it is very handy to work in a position where convenience is one of the indispensable elements in handling any piece of apparatus. Several pages are devoted to Amsler's polar planimeter, which is made by the company in three different styles. One part of the apparatus gives the area in inches and fractions, while the more improved form not only calculates areas, but also gives the average hight of the diagram.

Wood-Working Machinery.

Messrs. Rowley & Hermance, of Williams port, Pa., send us their catalogue of improved wood-working machinery. The book is a quarto of nearly 75 pages, handsomely printed, with red-lined border and illustrated with resolvent woodents. with excellent woodcuts. The various spe-cialties manufactured by this firm, which embody a full line of wood-working machinery, are clearly shown and carefully described. One peculiarity in the construction of the machine shown is the use of the firm's patented adjustable journal box. Numerous testimonials from parties who have used the machinery and tested this box are presented. The box is in the general

Pratt's Straightway Swinging Check Valve.—Side View and Section.

or, at least, always should be, which would enable the engineer at any moment to take the pressure off from the check, grind it in its seat, or replace the disk with a new one in a few minutes' time, even while the boiler is at work. On locomotives this construction is specially valuable, since even at a station the engineer can relieve the valve of pressvalve quite as desirable and durable as any of soft or semi-elastic compounds used fo valve seats and valve faces. The disk is held on a yoke turning on a pin and provided with a small projection having a hole in it, by which a small projection having a note in it, by which a hook can be inserted to remove it when necessary. The spindle on which the yoke swings is held in place by a hollow plug, shown in the exterior view of the valve. It will be noticed that the diaphragm in which the valve seat is formed is curved toward the opening and in the direction of the ward the opening and in the direction of the flow, so as not to present a sharp edge to the water. A very desirable feature found in this form of valve is that the construction gives almost a straightwa full bore of the pipe. In fact, should it be necessary, it is easy to have a valve of this style made which shall give the straight opening the full size of the bore without any obstruction whatever. Another point, which of considerable advantage, is that there is practically no friction in the opening and closing of the valve, and certainly no oppor-tunity to stick. Rising from its seat ob-liquely will have little effect on the operations, since there are no straight guides to cause friction and interfere with the working. In some of its essential features this valve has been on the market as a straightway check for some time; its form, however was entirely different from anything made in the valve line, having a straight outline and large, cumbersome plug. Its present form is that of the ordinary globe valve, and it occupies no more room, while affording all the advantages of the swinging revolving disk in the easy method of access. The disk can be made, when desired, to receive rings of Babbitt metal, leather or other substances so that those who do not wish the metallic

The Bransk Iron and Steel Works -Engineering gives the following interest-ing particulars relative to the Bransk Iron and Steel Works, at Orel, Russia, which are classed among the most important of that country. They were started on a very small scale in the year 1874, but have since grown to considerable dimensions. The Bessemer plant contains two 5-ton converters, and gives an output of 4420 tons per month. The

eats can be accommodated.

placing the valve requires but a few minutes. Where the valve is used as a check on a boiler, a stop is usually placed in front of it, or, at least, always should be, which would enable the engineer at any moment to take the pressure off from the check, grind it in weight of the other kind; the work of the journal can be kept central and 30 per cent., according to size, in favor of the former.

One of the most complete and tastefully gotten-up trade publications that we have seen this year is the descriptive catalogue of the Pennsylvania Steel Company, copyrighted by George W. Parsons, which has been lately received. We are not surprised to see that it is the second edition of the pamphle, for the information it contains must necessarily give rise to a large demand. The catalogue opens with a short sketch of the company, giving the dates and order of erection of the several buildings of the plant. At the end of the historical sketch is given a table of their total products of steel and steel rails from the year they com-menced working up to date. The table menced working up to date. The table shows an increase of from 1005 tons of steel in 1867 to 178,180 tons of steel in 1882, the corresponding product in steel rails increasing from 2221 tons in 1858 to 126,614 tons for last year. The new Bessemer plant confor last year. The new Bessemer plant contains three 8-ton and two 5-ton converters, the latter having recently been adapted to the basic process. With the exception of the basic process. one or two more pages of general interest, the remainder of the catalogue is devoted to a full description of their various products, which include all kinds of stationary railway fixtures, the whole forming a very useful and interesting book for reference.

Steam Pumps and Engines.

We have lately received an illustrated catalogue from Henwood, Whittaker & Co., of Philadelphia, makers of patent steam pumps and engines. Among the numerous cuts with which the book is filled is one showing a vertical section of one of their direct act steam pumps, from which a very clear idea may be gained of the system of valve motion which they use. The pamphlet also contains tables giving dimensions of cylinders, revo-lutions per minute, &c., of their differentsized pumps and engines. At the end of the catalogue are a number of useful rules relating to the setting up of engines, and also some general data referring to engines, pumps, boilers, &c.

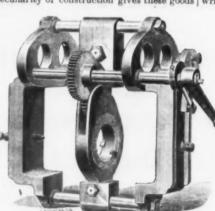
Crosby Steam Gauge and Valve Company.

The new catalogue of this company, just at and, is one of those valuable little affairs which find their way into the engineer's scrap book or pamphlet case, and is well worth any ordinary care taken in preserving

weight of the other kind; the work of the 300-pound drop hammer was equal to that of a crank lift hammer of 368 pounds weight. The difference was thus found to be from 20 the shaft, frequently met in connection with wood-working machinery

Wood-Workers' Specialties.

We have received from Messrs. Shimer & Co., Milton, Pa., a catalogue and circulars describing the Shimer cutter-heads for flooring, siding, doors, sash, blinds and other similar work. In this tool the bits are arranged in two series—upper and lower—which cut alternately, each pair completing a full cut across the edge of the lumber, producing either tongue or groove. The bits are secured to seats alternately arranged, placed as to insure a slanting cut, giving the clearance at the side, so that no part of the bit, with the exception of the cutting edge, comes in contact with the lumber.



Wrist-Pin Lathe

their widespread reputation for light and in a easy running. In the circulars illustrations are presented showing the work produced by these cutter-heads, directions for ordering, patterns of knives and other items of similar information useful to managers of planing mills. Another specialty illustrated described is Shimer's variety molding machine, which embodies some peculiarities of construction. The counter-shaft is built upon the base of the machine, and the whole strength and durability. The mechanism for raising and lowering the spindle is within the upright of the machine that supports the table and is operated by a hand-wheel. parts working the shipping lever are in the nature of a T, and are so placed as to be moved to the right or the left, as the case may be, with the foot, leaving the operator's hands free to move his work to the cutter. Directions for operating this machine, descriptions of a reversible cutter and a large nber of molding patterns are presented.

LATEST LEGAL DECISIONS.

PARTNERSHIP.

C and his brother were partners, and they took with them two persons, dividing the interests as follows: To the brothers, three-eighths each, and to the others one-eighth each. By one of the articles, the osses, expenses and profits were to be borne and divided in the same proportions, but the next article declared that it was agreed "that in the event that the net profits of the business in any one year should be so small that the portion of W and A, the one-eighth partners, should not amount to \$2500, exclusive of their interest on their unpaid capital, that then it is agreed that their accounts shall each be credited a sum sufficient to make that amount, unless such deficit should occur from losses outside the ordinary business of copartnership." The C's demanded from W and A their one-eighth of all losses, and the latter answered that the sum of \$2500 each was guaranteed them, and that, therefore, they were not chargeable with losses beyond a reduction of their profits to \$2500. In this case—Welsh vs. Canfield— \$2500. In this case—Welsh rs. Canfield—the Court of Appeals of Maryland reversed the decree below, which was in favor of the C's. Judge Ritchie, in the opinion, said: Partners among themselves may agree as to the proportions of profits and loss to be taken or borne by different members of the firm. In this controversy there is no real conflict between the articles stated. If W firm. and A are to be credited such sums as will be equivalent to their realizing a net profi of \$2500 each, whatever sums may be necessary to do this is clearly, we think, the sums they are entitled to receive and have the benefit of To credit them with \$2500 each, when such sums are not enough to put them in the same position as if they had made not profits to that amount each is simply to contribute a certain sum toward reducing the losses of each, and not to supply a substitute for gains unrealized.

MASTER AND SERVANT-SAFE MACHINERY-

A workman first employed as a "helper" in a manufactory was put to operating a splitting saw, which was without a guard, and he was injured and sued his employer for damages. This saw was one of the most damagers, weaking in the factor this saw. for damages. This saw was one of the most dangerous machines in the factory in the hands of a workman without the proper experience. The superintendent said to the plaintiff that P, another employee, would show him how to use the saw, but P gave him general directions only, and added: "Look out and don't get cut." The point on which the case. Wheelers West March 1997. "Look out and don't get cut." The point on which the case—Wheeler vs. Wason Man-ufacturing Company—turned, in the Supreme Judicial Court of Massachusetts, was whether or not sufficient notice had been given the plaintiff as to the risk he was taking in operating the machine without a guard. Judge C. Allen, in ruling against the company, said: "I. We cannot say that the jury would not be warranted in finding that the saw was in an unsafe and improper con-dition for the plaintiff, a beginner in the use of such machinery, to be put to work upon. The refusal to rule that the defendant was not bound to provide a saw with any guard or protection rests upon the same ground. It was a question of fact what protection should was a question of fact what protection should be afforded, or whether any guard was rea-sonably necessary. 2. As to the question of a due and proper warning notice: The ser-vant does not assume and is not to bear the risk of unknown and undisclosed perils, but he is held to take those risks which he knows, or which, by the use of ordinary care, he mucht to learn to be incident to the attractor ought to learn to be incident to the nature of the business in the place and manner where it is carried on. The master's duty is to pro-vide machinery which is reasonably safe and proper; and if the use of it is attended with special peril, such as his servants ought to know, and if there is, accordingly, under the circumstances of the particular case, a duty resting upon him in respect to giving notice to the servants of such special peril, that duty is not discharged by delegating the perform-ance of it to a third person."

A Portable Wrist-Pin Lathe.

The L. B. Flanders Machine Works, of Philadelphia, Pa., have favored us with parcomes in contact with the lumber. This ticulars relative to their patent portable peculiarity of construction gives these goods wrist-pin lathe, which is hown in the accom-

panying engraving. The turning of wrist pins, when cast or forged solid in locomotive cross-heads, is a laborious them perfectly round and in line is a very difficult operation. The work, however, can be accomplished very expeditiously and in a satisfactory manner with the appliance here
shown. The operation of the machine will be readily understood. The center

marks on the outside of the cross-head are first laid out exactly opposite where the center line is wanted, and on these center marks are screwed the centers of the machine. After being placed on the cross-head for work, the cutters are so arranged that the whole length of the pin can be turned from end to end, and as true and smooth as though turned in a lathe. The ad-vantage of having a true cross-head

ead reputation for light and
In the circulars illustrations showing the work produced by meet the wants of the trade, and the standard size takes a great range of loco-motive cross-heads. Each machine is also provided with all the necessary wrenches, tools, &c., for immediate use.

> The reported guarantee by the Dominion lovernment of annual dividends for a term of years on \$100,000,000 Canadian Pacific Railroad bonds evinces an earnest desire to form a connecting link between Ontario and Manitoba, at any cost and without delay. Manitoba is a new development in the Brit-ish North American system, intended to complete the unity of the Dominion in an independent existence, and despite the rivalry of the great Northwest. Although the inhabitants of Manitoba sometimes manifest a spirit of discontent, they cannot be allowed to gravitate into allegiance to the neighboring Republic.

TO

WHOLESALE AND EXPORT TRADE,

SARANAC HORSE NAIL COMPANY,

Plattsburgh, N. Y.



No. 5 No. 6 No. 7 No. 8 No. 9 No. 10

PER POUND.

26c. 23c. 21c. 20c. 19c. 18c.

Either Blued or Polished.

We use SELECTED BRANDS only of NORWAY IRON, and in QUALITY and Superior Finish they are Guaranteed to be Unsurpassed in the World.

A. WILLIAMS, President.

S. F. VILAS, Vice-President.

W. S. GUIBORD, Secretary.

For Discounts and Terms address either the FACTORY, or



These Cuts are of

SARANAC NAILS

WHEN COLD.



DODMAN & BURKE,

100 Chambers Street, - NEW YORK,

Who are CENERAL ACENTS.





RHODE ISLAND TOOL CO.,

SUCCESSORS TO

PROVIDENCE TOOL CO.,

MANUFACTURERS OF



SAIL MAKERS' AND SHIP CHANDLERS' HARDWARE,



Square and Hexagon Nuts, Washers, Chain Links, Turn Buckles, Clinch Rings, Hooks and Thimbles,



Sister Hooks, Open Thimbles, Grommets and Grommet Rings, Grommet Knobs, Rigger Screws, Marline Spikes, Ship Scrapers, Norcross Iron Blocks, &c., &c.

DROP FORGINGS OF IRON OR STEEL MADE TO ORDER.

CORRESPONDENCE SOLICITED.



PROVIDENCE, R. I.



88.

S

The United States Foreign Trade in Coal and Metals for the Month and for Nine Months Ended September 30.

FROM THE REPORT JUST ISSUED BY HON. JOSEPH NIMMO, JR., CHIEF OF THE BUREAU OF STATISTICS.

L	191	216	P	ta	١.

		Quan	itities.		Values.					
Articles.	Month end	led Sept. 30.		nths ended t. 30.	Month ende	ed Sept. 80.	Nine months ended Sept. 30.			
•	1883.	1892.	1883.	1882.	1883.	1882.	1888.	1882.		
Brass, and manufactures of copper ore. lbs. copper pigs, bars, ingots, old. lbs. copper, other manufactures. ced, and manufactures of detals, metal compositions, bronze manufactures. All other dieral substances, n. e. s.	161,986 44,918	85,588 a 27,022	**********	***********	Dollars. 42,347 191,030 16,196 4,868 16,232 10,574 108,408 137,544 4,027	Dollars. 65,284 961,610 16,435 3,121 80,092 27,337 218,362 667	Dollars. 873,258 1,398,623 90,126 38,374 186,539 66,725 1,764,822 71,224	Dollars. 551,898 1,424,458 145,826 49,856 230,996 167,290 1,463,146 55,315		
ore, iron. tons Iron and steel, and manufactures of tons tons	50,564 31,894	99,944 76,385	409,688 985,856	473,803 428,482	118,727 557,497	285,580 1,408,402	1,020,773 4,219,594	1,275,797 7,909,488		
Iron, wrought and cast	4,905 1,870 9,274,584	5,670 a 15,210,488	41,866 a 72,785,786	121,581 a 126,800,585	73,518 21,719 187,950	98,103 d 317,582	681,560 d 1,452,560	2,286,861 d 2,645,057		
Of iron tons Of steel, or in part of steel tons Hoop, band, and scroll iron lbs. Sheet, plate and taggers' iron lbs. Tin plates, terne plates, or taggers' tin lbs. Cutlery Fire-arms.		221 25,457 1,887,653 4,113,630 35,784,569			128 94,146 8 109,917 1,596,314 158,592 160,539 78,441	7,428 860,517 32,370 187,802 1,329,726 201,929 203,881 325,940	18,105 989,396 37,518 387,082 18,845,306 1,555,349 969,290 1,325,359	1,010,849 4,564,551 148,441 553,768 14,062,671 1,560,561 1,217,090 1;741,495		
Cotton ties, or hoops for baling purposes, of iron and steel. Bos. Hoops, bands. sheets and plates, of steel. Bos. B	8,613,045 452,443 1,788	a a	a a	a a	142,409 20,226 123,197					
Wire rods, (rivet, screw, nail and fence), round, in coils and loops, of iron or steel	10,292,744 589,752 266,185 175,239	a a a a	a a a a	a a a a	189,718 36,934 15,018 8,678 1,828	1,679,774	11,880,626	15,567,868		
Needles					28,381 188,170 592,490	548,640	4,692,856	8,712,276		
inc. spelter, or Tutenegue, and manufactures of: In blocks or pigs, and old	290,590	1,859,184	7,855,888	19,821,842	10,992	78,193 14,741	273,449 65,791	804,262 189,517		

Domestic Exports.

			•					
Brass and manufactures of					22,642	14,824	183,398	170,801
Coal: Anthracitetons	84,490	68,145	486,927	405,618	402,790	291,787	2,286,978	1,842,429
Bituminoustons	64.048	38,096	428,292	812,191	221,910	119,868	1,452,550	1,054,788
('opper, and manufactures of :	- and an	3.7000		- Sangana		1110000	.,,	.,,,
Oretons	1,072	140	7,842	1,977	160,891	17,165	1,383,235	158,212
Ingots, bars, and oldlbs.	1,946,986	\$ 315,718	13,687,791	2,892,583	\$ 800,100	\$ 54,140	2,084,198	519,977
Sheets	35,879	1 010,110	10,001,181	6,086,000	8,850			
All other manufactured	*********	******** ****	********		15,219	6,044	85,420	68,742
Instruments and apparatus for scientific purposes, including telegraph, telephone and other elec-								
trie		**********		********	38,018	27,878	597,104	566,802
Iron and steel, and manufactures of :								
Iron oretons	284	125	1,299	4,829	980	813	5,665	22,337
Pig irontons	50%	1,149	2,666	4,335	11,220	88,780	82,677	145,988
Bar ironlbs.	175,990	101,956	1,220,088	1,023,995	7,117	3,701	44,069	39,826
Band, hoop and scroll ironlbs.	9,110	16,288	473,499	267,750	442	598	19,784	11,044
Car wheels	2,147	1,338	14,134	9,156	18,721	13,022	144,977	95,433
Castings, n. e. s	** ********	*********		*********	52,488	28,548	275,509	310,808
Cutlery	*********	*********	**********	******	7,284 109,608	8,898 55,120	68,895 931,164	65,162 697,652
Firearms. Ingots, bars and rods of steellbs. Locks, hinges and other builders' hardware	96 469	52 600	490 001	898, 609	2,912	4,807	46,530	73,511
Ingots, bars and rods of steel	90,400	000	400,001	0004000	79,201	d	d	d
Machinery	****** * ***			***********	488,751	558,448	4,244,446	4,288,477
Nails and spikeslbs.	671,003	462,052	8,485,698	6,179,462	23,496	17,080	289,889	247,499
Plates and shoots :	011,000		Of soulons	- dannia	40,100	21,000	400,000	~~,~~
Of iron lbs.	121,102	6	b	b	4,839	b	b	b
Of steel lbs.	1,530	6	c	c	168	c	e	c
Printing presses and parts of	***********	**********			18,410	17,888	902,772	161,057
Railroad bars or rails—		-						
Of irontons	****** ** ***	21	258	2,230	*** *******	1,048	16,306	125,628
Of steeltons	25	5	1,817	792	749	600	82,148	72,772
Saws and tools		**********			105,288	55,675	1,072,768	783,710
Scales and balances					31,077 255,866	23,953 344,910	232,101 2,232,490	242,267 2,282,400
Sewing machines and parts of	*********	******* *****	********	*** *******	200,000	044,010	4,400,400	16,202,400
Steam engines and parts of— Fire engines		a		a		8,000	7,575	23,070
Locomotive engines	89	10	905	191	273,067	122,238	2,057,557	1.411.112
Stationary engines	7	12 10	102	64	8,307	19,020	127,891	110,121
Boilers, and parts of engines					29,503	12,464	194,756	92,578
Stoves and ranges and parts of		***********			14,987	21,828	166,202	140,940
Stoves and ranges, and parts of	438,201	a	a	a	31,768	d	d	d
All other manufactures of iron and steel	**********				822,796	616,179	8,978,048	5,027,333
end and manufactures of	**********		**********	**********	7,057	2,256	45,621	35,017
Plated-ware	**********	**********	*********		49,907	36,796	828,818	818,342
fin. manufactures of	*********	*********	**********		14,077	18,057	160,617	162,777
essels sold to foreigners—	Out.		400	000	4 000		07.070	W. 0.00
Steamerstons			160	900	4,000	********* **	85,950	56,063
Sailing vesselstons	*********	*********	4,548	1,442			100,084	84,700
ine, and manufactures of-	16	9)	64	108	1,468	829	5,594	7,456
Ore or oxidetons Pigs, bars, plates and sheetslbs.	4,111		102,909	1,121,539	258	80,461	6,949	95,181

Exports of Foreign Merchandise.												
Brass, and manufacturers of		51	56	548	,	74 520	463 557	2,287 4,087				
Copper, and manufacturers of : Ore (fine copper contained therein)	66,793	a	а	a	7,448	7,879	50,868	32,518				
All other manufactures of	21,835		27,295	- 2,812	2,000 2,674	G18	2,700 14,018	11,917				
Iron and steel, and manufactures of: Pig irontons Scrap, fit only to be remanufactured—	56	147	545	1,377	987	2,205	8,426	24,580				
Bar iron, rolled or hammeredlbs.	82,718	144,484	726,602	702,154	1,564	2,299	12,501	2,694 12,924				
Bars, railway— Of iron	180,586	5,213 8,000 12,997 29,283	33 20,261 40,570 800,720 1,579,273	1,389 20,949 8,000 55,101 2,440,144	18,721 5,169 80	1,300 155,464 51 591 1,370 790 590	1,904 562,692 810 6,571 59,789 1,202	29,317 627,317 141 8,339 96,318 7,271				
Firearms. Machinery Ingots, blooms, slabs, billets and bars of steel,	**********		**********		1,047 8,086	6,190	29,621 55,331	2,391 62,589				
and steel in forms, n. e. s. cons Wire and wire-rope and strand, iron or steellbs. Anvils, axles and forgings, of iron or steellbs. Chains, of iron or steellbs. Needleslbs.	16,446 4,384 5,170	a	a a a	a a a	68 471 170 142 28	27,844	224,591	240,489				
Needles	**********				18,765	1,198	4,590	19,309				
Bronze manufactures	*********				2,877	2,590	35,666	19,887				
All other. Tin, bars, blocks or pigs, grain or granulated.lbs. Zinc. spelter. &c.		********	87,120	227,860			19,038	58,179 572				

a.—Not stated. b.—Included in "band, hoop and scroll iron."
c.—Included in "ingots, bars and rods of steel." d.—Included in "all other manufactures."

German and foreign officers have been wited to Buckau, near Magdeburg, to witerman artillery against German armor-lating. The gun employed is one of Krupp's eaviest calibers, the tube being more than feet in length and weighing over 50 tons, hile the bore is 30 % cm. The shot used in al, tapering to a very sharp point, the maerial consisting of Krupp's hardened steel. he charge of powder weighs 2½ cwts. The plates employed in the construction of the of considerable distinction. and of a hardness equal to that of the finest

an elegant jeweled and enameled gold buckle, gold fibulæ, silver armlets and wrist ornaments, a bronze shield, breastplate and helmet, iron sword, spear, bronze bucket, two drinking horns, with ornamental metal mountings, two glass vessels remarkably characteristic of the early Anglo-Saxon glass manufacture, and other interesting items. he experiments stands over a yard high relation of human remains, showing no nd weighs half a ton. It is solid and conisigns of cremation, were found with the signs of cremation, were found with the articles at a depth of about 8 feet below the natural level of the floor of the barrow, which must have been the grave of a person

> A London company has patented a device for lighting railway coaches by means of a battery carried beneath them. It is said that the chemicals used will cost only one-

German Armor Plating .- A number Anglo-Saxon objects. The articles include Northern road was lighted brilliantly by six Swan incandescent lamps, the supply being furnished by a battery of 12 cells, the length of the battery being 4 feet, and the breadth and depth each 8 inches. The excellence and steadiness of the light were highly com-mended; it was perfectly easy to read small type while the car was at full speed. After other preliminary trials, several railway companies have made propositions for the adoption of the system. The inventors say that they can supply private dwellings at less cost than the estimates lately published by the Edison or Goulcher companies. A battery capable of supplying 18 lights for hours continuously, it is stated, would weigh 300 pounds.

Morton & Co., iron merchants, of Glas-Saxon Antiquities.—The recent examination of a tumulus situated in the old churchyard of Taplow, England, has resulted in the discovery of a remarkable series of On a trial trip a Pullman dining-car on the of both are heavy.

Morton & Co., Iron merchants, of Glasson, and the Greenook Iron Company, have eighth as much as the appliances hitherto used to develop the same electrical energy.

Co., shipbuilders, of Govan. The liabilities of both are heavy.

INDUSTRIAL ITEMS.

NEW HAMPSHIRE.

The Nashua Co-operative Foundry Company have recently purchased the tools, to-gether with the land and buildings now occupied by them and formerly known as the Otterson Foundry.

MASSACHUSETTS.

The new Groveland iron foundry, at Dighton, is nearing completion, and the machinery will soon be in position.

The Hayden Company, at Hayden, are building an iron foundry in their mill yards about 50 feet square, and will do their own casting in the future. Since the flood of 1874 the concern have had their iron castings made at the Florence and Easthampton foundries.

A stock company of \$300,000 capital has been formed for the manufacture of flint and murrhina glass in the Cape Cod glass works, at Sandwich.

Reed Bros., tack manufacturers, contem plate removing their rolling mill from Mat-field to Brockton.

CONNECTICUT.

The Stamford Manufacturing Company's works cover five acres, and employ 300 men.

Work has been commenced on the new Howe Machine Company's factory, in Bridge-port, and it is expected that the three-story brick walls will be finished in January.

PENNSYLVANIA.

Stockholders of the bankrupt Danville Steel Company have agreed to transfer the plant to a new company to be at once organized.

It is expected that the improvements at Robesonia Furnace, which have been under way for several months, will be completed in a few days and the furnace got ready for operation within a month.

Wister Furnace, in Harrisburg, which the Reading Railroad Company have been endeavoring to get possession of for some time, has at last been sold to that corporation for \$100,000, and the new management will assume control on January 1. The furnace has frequently been reported sold since work at it ceased, but the stories were simply rumors, as Mr. Wister would not give simply rumors, as Mr. Wister would not give the place up unless the proper sum asked was paid. It is the intention of the company to tear down the furnace and utilize the ground in the interests of their own as well as the new Vanderbilt or South Pennsylvania Railroad The furnace was owned by the firm of J. & J. Wister, John Wister, of Duncannon, being the partner of his brother Jones.

The glasshouse of Brown, Maxwell & Co. Limited, owned by Perry Brown, of Ro-chester, was discovered to be on fire on the evening of November 30. The works are located near the P., F. W. & C. R. R. station, in Rochester, and have not been in operation for some months. The fire was the work of an incendiary. The building is a total loss. The works were valued at \$13,total loss. The works were valued at 000, with an insurance of about \$5000.

The new spike mill at the Montour Iron and Steel Company's work, Danville, is running along briskly at present, and the orders on hand compel its running day and night.

The report that the Pennsylvania Steel Company's works, at Steelton, would shut down is emphatically denied.

Joseph P. Reed & Co., of Philadelphia, have been appointed exclusive sales agents for the Edge Hill Furnace, and are prepared to provide customers with pig iron at the market prices.

PITTSBURGH AND VICINITY

Richards, Hartley & Co., glass manufac-turers, have struck a flow of natural gas at their well near Tarentum. The flow is reported to be stronger than at the plate glass works' well.

Moorhead & Co., at their Soho mills, will soon commence the manufacture of open-hearth soft steel, to be used for stamping purposes. Manufactured gas will be used as fuel.

Carnegie Bros. & Co. Limited, have fitted to make this offer is that they will bear all expenses of books, rooms, &c., while the library will be entirely under the supervision of the men. They will be allowed to make the selection of the books suited to their tastes, the firm paying for whatever they wish. The men have organized and elected an executive committee, who will have in charge the selection of the books.

The glass factory of Thomas Evans & Co. outh Side, was discovered to be on fire early on the morning of November 23, and burned to the ground before the fire department could get control of the flames. The factory was a large one, only two years old, and fitted up in the most approved manner. The loss is \$120,000, on which there is an insurance of \$40,000. The cause of the fire is unknown.

The Portsmouth Iron and Steel Works were again offered for sale last week, but there were no bidders. The creditors of the Union Iron Company

met at Portsmouth and agreed to accept 60 per cent. of the total indebtedness, \$600,000, which would amount to \$360,000. Those having Mr. Campbell's indorsement are to and reage selling price of steel rails from receive 75 per cent., and those holding Union 1867 to the present time: Iron Company paper 45 per cent.

The new Kelly Nail and Iron Company, at Ironton, while delayed at the outset by a strike among their nailers, have overcome all difficulties and have their mill running full in all departments.

The works of Brown, Bonnell & Co., at Youngstown, are still running uninteruptedly.

The creditors of James Ward, of Niles, have attached the Shenango Works, in Newcastle, Pa., formerly operated by the Lawrence Iron Company, Limited.

ILLINOIS.

Large iron works, comprising pipe and rolling mills, were started the 14th of last month in Kewanee. The works give employment to about 500 hands and have a capacity of some 100 tons of pipe and tubes per day of 24 hours. The heating is done entirely by gas, the company having their own produc-ers. The mills are lighted by electricity, enabling the work to be carried on contin-

The plans of H. H. Porter, of Chicago, for reorganizing the Union Iron and Steel Company have met with encouraging success, and are so far advanced that there are grounds for the hope that the mill will be in operation in time for next year's orders. More track is deemed necessary, and appli-cation has been made to the City Council for permission to lay the same. All residents along the line have consented to the laying of the track. The necessary money for the reorganization, as per the plans proposed, is raised, and all papers, &c., prepared for the final adjustment.

The Rising Sun Tool Works, of Rockford, of which H. B. Rising is proprietor, have been removed to larger and more commodious quarters, and the new shop provided with the best of new tools for the accommodation of increased bysiness. dation of increased business.

The Columbian Iron Foundry and Machine Tool Works, of Chicago, are building a 40-inch planer 26 feet long, and a lathe with 24oot bed and 54-inch swing, upon special orders. They have also just completed seven 25 and 30 inch planers, and are now at work on six lathes of 24-inch swing and 10-foot bed. This company are also constructing four bolt-cutters and six improved stave machines. They are busy in general job work, and are nelting 25 tons of pig iron daily and employing 125 men.

The North Chicago Malleable Iron Company have sold to William Deering, for \$18,000, their extensive grounds and plant, corner Diversey street and the Northwestern road.

An item in The Iron Age of last week, copied from a Chicago exchange, gave the output of the South Chicago Works of the North Chicago Rolling Mill Company as 3000 tons of pig iron and 500 tons of steel rails per week. We are informed that the company are turning out about 500 tons of steel rails per day, and 3500 tons of pig iron per week, the latter exclusively for their own use in rail manufacture.

INDIANA.

B. F. Dow & Co., agricultural implement manufacturers, of Peru, have made an as-signment. Their liabilities are reported at \$150,000, and their assets at \$300,000.

KENTUCKY.

In rebuilding, the Norton Iron Works will construct their mill entirely of iron, making a fire-proof building.

The Ashland Foundry and Machine Shops are overrun with orders. They are very busy repairing the machinery of the Norton Iron Works.

The New Standard File Company made an output of 500 dozen files of all sizes week before last, and as soon as they can secure additional hands from the East, which will be shortly, their average weekly production will be something like 500 or 600 dozen. At the present time they are unable to keep up with their orders.

Old Rails in San Francisco. - The San Francisco Bulletin for November 21 contains the following description of the position of old iron rails in that city: "Another cargo old iron rails in that city: ''Another cargo of old rails arrived here from Bombay yes-terday. The railroad magnates of India are following hard upon the example of their contemporaries in America by substituting contemporaries in America by substituting steel for iron rails, and hence these cargoes of old rails from Bombay every few months. The vessel yesterday brought 2000 tons. These rails came to a poor market. The iron workers of the country have recently closed down several establishments on ac-count of the depression in the trade. The rolling mills in this city have not as many men on the pay-roll as formerly. There is but little demand for steel rails at present. The large orders for the Market Street Cable carnegie Bros. & Co. Limited, nave fitted up and furnished three large rooms over their general office, on Thirty-third street, for the use of their employees as public library rooms. The manner in which they propose of Golden Gate Park to the ocean beach. old rails become worn. It is presumed the other roads are doing the same thing where

> The annual message of the President of Mexico speaks of the progress of railway building as being very marked, the Mexican Central having over 930 miles finished, and the Mexican National over 620 miles. Altogether there are at present constructed, in all parts of the Republic, over 2976 miles of rail-roads. The telegraph system has also been rapidly extended, and the federal lines now comprise a network of some 11,160 miles. Other internal improvements are the projects for the development of the industries of mining and agriculture. Manufactures are also A Belgian colony for the cultivation of linen has been contracted for. Immigration is assured to a large extent by the contract with the new Mexican Transatlantic Company, which will bring at least 1000 immigrants on each of its steamers every voyage.

Ti following table shown the production

word to see brocess	CARREST S	
Years.	Net tons.	Average price
1867	2,550	\$170.00
1868	7,225	158.50
1869	9,650	132.25
1870	34,000	106.75
1871	38,250	102.50
1872	95,070	112.00
1878	129,015	1:20.50
1874	144,954	94,25
1875	990,863	60.75
1876	412,461	59.25
1877	438,100	45.50
1878	559,795	42.25
1879	668,118	48.25
1890	968,075	67.50
1881	1.855,519	61.12
1882	1,460,920	48.50
1858 (May)		38.50
THEN / NAME)		98 00

Special Notices. Auction Sale of Machinery.

In order to reduce our stock we will sell at Au tion, at to o'clock, a. m., Dec 12, 1883, our stock of New and Second-hand Machinery, at our Branch Warerooms, 20, & 200 Center Street, New York City. Tools consist of a first-class assortment, nearly every item new, and sale positive. We give below a rartfal list, viz.:

ENGINE LATHE: as follows, back-geared, serve worting, power cross-feed, hollow spindle, and compound rest: 18ft, x2in.; 17ft, x18; in.; 28ft, x2in.; 18ft, x17in.; 17ft, x2oiw.; 26ft, x16in.; 110ft, x18in.; 14/2 ft, x14in.; 19ft, x18in.; 14ft, x15in.

DRILL PRESSES, back-geared, quick return, power feet: 132 in., 130 in., 128 in., 124 in., 126 in., 14-Spindle Drill; 1 No. 7 Drill; 1 3-Spindle Drill.

NUT TAPPERS.—2 7-Spindle and 1 2-Spindle Machines.

Machines.

SPEED LA: HES. -1 9 ft. x 15 in.; 2 5 ft. x 14
in.; 1 6 ft. x 15 in.; 1 6 ft. x 25 in.

IRON PLANERS—1 7 ft. x 32 in. x 25 in.; 2 6 ft.

IRON PLANERS—1 7 ft. x 32 in. x 25 in.; z 5 ft. x 24 in x 24 in x 24 in z 2 shaping Machines, 1 48 in Radial Drill, Betts Machine Co. make; No 3, 50 ib. "Palmer" Power Hammer, 1 Spinning L the, 3 Watchmakers' Lathes, 4 Milling Muchines, 1 40 H. P. Vertical Engine, 5 Small Engines, 4 Hydraulic Jacks, 24 Vises, 10 L the Chucks, 4 Beach Lathes, 5 Sceam Pumps and many other items.

Machinery can be examined at any time prior to sale. Send for Catalogues.

S. C. FORSAITH & CO., Machinists and General Machine Dealers MANCHESTER, N. H.

For Sale.

second-hand 6 H.-P. Baxter Steam Engine .. \$300 " 14 in. bwing Screw-Cutting Engine Lathe... NEW 15 in, Swing Plain Lathe 225

1 to H.-P. Hoisting Engine and Boiler
1 12 H.-P Double Cylinder Hoisting Engine and Boiler.... r 8 x 24 Stationary Steam Engine, Woodruff & Beach Cut-off.....

Portable Engines, from 2 to 35 H.-P., constantly on hand. Saw Mills, Grist Mills. All kinds second-hand machinery bought, sold, rested or exchanged.

JOHN MCCLAY & SON. 442 Asylum St., Hartford, Conn.

Important Notice.

One of the Leading Continental Wholesale One of the Leading Continental Wholesale Houses is desirous of representing First-CLASS AMERICAN MANUFACTURERS. The firm has constantly on hand a large assortment of Hardware, Steel Manufactures, Tools, &c. In a considerable portion of Europe the house has, during the entire year, its traveling agents on the road, and wishes to push the sule of all sorts of AMERICAN SAW4, AGRICULTURAL IMPLEMENTS, PICHFORKS, RAKES, SHOVELS, SPADES, HATCHETS and AXE-, MECH-NICS' TOOLS, both for wood and metal working; CATTING4. HATCHETS and AXE-, MECHANICS' TOOLS, both for wood and metal working; (AATING-, FURNITURE CASTERS, SCREW PULLEVS for lamps; WINDOW SHADE ROLLERS and appurtenances, KIICHEN UICHSILS, EN AMELED HOLLOW-WARE, MACHINES FOR FAMILY USE AND KITCHENS, and LEATHER BELIING. Payment follows on receipt of bill of lading, and is anade by a first-class New York Bank. All outsiness offers in answer to this advertisement will have to be addressed, postage paid, to The Iron Age office, and samples laid down, free on board, at New York, marked "W. Z. S." Cattlogues and Prices Current will have to accompany such offers.

Wanted.

A gentleman of long experience in the Western Hardware Jusiness of high standing and reputation, a good Salesman and has the entire confidence of the Western Jobbing Trade, desires a few more First-Class Houses or Factories to connect with his present lines, which have Goods Sui able to the Western Trade, in quality and prices. Address

Care Pribyl Bros., 48 and 50 Lake Street, Chicago, Ill.

A Gentleman.

of large experience and ability as General Manager, and with extensive acquaintance with domestic and ex ort tade, desires agency of Manufacturer of Hardware, Iron, Steel, Nails, Bolts, Wire, &c. Wilt take store in Cliff or Chambers Street, New York For Interview, address "IRON MERCHANT."

Post Office Box 3710, New York.

Wanted. A first-class "teel Plate Roller, accustomed to high train, can have permanent empleyment, at highest wages, by analying promptly, stating references, to "STEEL PLATE ROLLER," Office of The Iron Age, 220 S. 4th St., Philadelphia

Estimates Furnished

and contracts taken for power shears, power punches, steam hammers, steam riveters, plate planers, accumulators cranes, hydraulic presses, &c., upon the most favoraple terms to consumers. Work guaranteed.

B. GRAVES LOUDEN. 22d St. and Washington Ave., Philadelphia.

Wanted.

In January, a compete t and reliable foreman for a factory of Hardware Specialries. Must be a thorough mechanic. Address with references, giving full patitulars as to former experience and salary expected, in confidence.

Office of The Iron Age, 8; Reade st., New York

PECIAL NOTICE TO OWNERS OF CHARCOAL FURNACES.—A gentieman of large experience in stacking and overseeing a Charcoal furnace would like a situation as General Manager or second. References first-class. The South preferred. Address.

Office of The Iron Age, 83 Reade St., Ne v York.

TO MANUFACTURERS AND IMPORTERS. A first-class Salesman, who is well acquainted with the Hardware trade in the Southern States and Iexas, is desirous of taking agencies on commission. "TRAVELER, Box 73," Office of The Iron Age, 83 Reade Street, New York.

A First-Class Cutlery Salesman

wants to represent Manufacturer, on commission, South. "INDUSTRIOUS," Office of The Iron Age, 81 Reade st., New York.

WANTED—A Line of Cutlery from a good house for Ohio, Indiana and Michigan, by Traveler of three years' experience. Address "CUTLERY, 147," Office of The Iron Age, 83 Reade st., New York.

Office of The Iron Age, \$1 Bellow CruPRIDGE WIRE FOR SALE.—Thirly tons Cruchle Steef Ga vaniged Wire, \$0, 7 gauge.
Surplus from the Brooklyn Brid-e Cables.
Address E. CANTLON.
147 Imley St.,
South Brooklyn, N. Y.

A NALESMAN,
who has been on the road selling Hardware for
ten years, would like some Specialties from manifacturers to sell on commission.
Address "TRAVELER, BOX 123,3"
office of The Iron Age, 8, Reade St., New York.

Special Notices.

SECOND-HAND AND NEW MACHINERY

One Corliss Beam Condensing Engine, 30 in. x 72 in One Horizontal Corliss Engine, 16 in. x 42 in. One Horizontal Corliss Engine, 16 in. x 42 in. One Horizontal Corliss Engine, 16 in. x 42 in. One Horizontal Corliss Engine, 17 in. x 30 in. One Horizontal Corliss Engine, 12 in. x 32 in. One Horizontal Engine, 13 in. x 24 in. One Horizontal Engine, 17 in. x 16 in. One Horizontal Engine, 17 in. x 16 in. One Horizontal Engine, 17 in. x 16 in. One Horizontal Engine, 18 in. x 10 in. One Hor. Tul. Boiler, 16 in. x 10 in. One Hor. Tul. Boiler, 16 in. x 10 in. One Hor. Tul. Boiler, 18 in. x 18 in. One Hor. Tul. Boiler, 18 in. x 18 in. One Locomotive Boiler, 10 in. x 18 if. One Upright Boiler, 28 in. x 11 ft. One Locomotive Boiler, 10 in. x 18 if. One Engine Lathe, 18 in. x 18 ft. One Engine Lathe, 18 in. x 11 ft. One Engine Lathe, 18 in. x 18 ft. One Engine Lathe, 19 in. x 11 ft. One Engine Lathe, 19 in. x 16 ft. Pond. One Engine Lathe. Yery heavy One Engine Lathe. Yer, 1 in. x 6 ft. One Planer, 22 in. x 5 ft. One Milling Machine. 44 in. One Upright Drill, 30 in. One Upright Drill, 30 in. One Upright Engine, 9 in. x 8 in. One Upright Drill, 30 in. One Upright Engine, 9 in. x 18 in. One Upright Drill, 30 in. One Upright Drill, 30 in. One Upright Drill, 30 in. x 18 in. One Upright Drill, 30 in. x 18 in. One Upright Drill, 30 in. x 18 in. One Upright Engine, 9 in. x 18 in. One Upright Drill, 30 in. x 18 in. One Upright Drill, 30 in. x 18 in. One Upright Engine, 9 in. x 18 in. One Upright Eng

J. Gray's Machinery Depot, 37 Dey St., N. Y.

BARGAINS.

Engines, Boilers, Machine Tools.

700-lb. Ferris & Miles Steam Hammer.

Send for List.

Wanted,-12-ft. Boring Mill. 72-in. x 72-in. x 25-ft, Planer.

LOVEGROVE & CO., 152 N. Third Street, Phila., Pa.

For Sale.

Stock of Hardware, Furniture and Implements combined, in a th iving town in Central Illinois. Gross profits in the last four (4) years over Forty Thousand Dollars (\$10,000). The proprietor wishes to engage in he wholesale train. Will sell all departments together or separately. Address "ADVERTISER, 77," care Simmons Hardware Co., St. Louis, Mo.

Proposals for Water Works.

The Board of Water Commissioners of the Village of whitehall will receive sealed proposals on January 15th, 1884, at the Thustees' room, in the Village of Whitehall, for entering into contracts for labor and material in the construction of the work of supplying the Village of Whitehall with pure and wholesome water.

Plans and specifications of said work will be furnished parties desiring to make such proposals upon application to the secretary of the Board.

The work will embrace about 800 tons of pipe, a well, pump, engine and reservoir.

Dated November 27th, 1883.

W. G.C. WOOD,

Secretary of the Board of Water Commissioners, Whitehall, N. Y. The Board of Water Commissioners of the Vil

DRAFTSMEN.

WANTED—Several first-class men to work under direction on designing new machinery of a high class. Engineering knowledge is essential, and should, if possible, include training both in

the sould, it possible, include training both in theory and practice.

Address, stating age, references, past experi-ence and compensation expected.

"W. E. Y.," Box 50,

Office of The Iron Age, 83 Reade St., New York.

Salesman.

A gentleman of large experience, commanding good New York City and vicinity trade, would like to take line of Padlocks; also Hardware Specialies. Salary or commission. Address "HARDWARE SALESMAN, 106," Office of The Iron Age, 83 Reade 8"., New York.

E. BISSELL & CO.,

Wholesale Hardware Auctioneers. 23 Chambers and 65 Reads Sts., N. Y.

Sales held weekly for the trade. Consignments solicited. We refer to the leading manufacturers and importers.

REDUCTION IN PRICE.
JENNINGS DISCOUNT TABLES.

JENNINGS' DISCOUNT TABLES.

2 to 8 to 8 and all the combinations.)

We find them correct and wonderfully "labor saving"—Sargent & Co., New York.

"Your discount tables are all you claim for them."

T. W. Root, with Russell & Erwin Mfg. Co., Toledo. O.,
Counting House Edition, postpaid.

\$\frac{1}{2}\$ to \$\frac{1}\$ to \$\frac{1}{2}\$ to \$\frac{1}{2}\$ to \$\frac{1}{2}\$ to \$\frac{1}{

LEIGH'S DISCOUNT BOOK ectally arranged for the use of th

HARDWARE TRADE Acknowledged by ALL the best work of the kind ver published. Price by mail ONE DOLLAR. Address E. B. LEIGH, Sec'y The American Brake Co., St. Louis. Mo.

WANTED.

A No. 1 Mill for grinding Clay and Ore. State kind and lowest price. LOCK BOX 18, Lebanon, Pa.

SITUATION WANTED—By a First-class Travel-ing Salesman, in the Hardware, Metal and House Furnishly line. Is also an experienced Buyer and an expert Bookkeeper and Accountant, Known and traveled all over the United States and

"HARDWARE,"
P. O. Box 1271,
New York City

New York City.

W ANTED —Situatio 1 by a Blast Fornace Manager
of the largest cas. Has been accustomed to the details and management of Mines, Kallivaska, at dail
oracial duties devolving upon a Re-ddent Manager.
Twenty years' experience; active and we's kinded to
work. Address.

126 W. 120th Street, New York City.

SITUATION WANTED—By a Constructing Engineer. Granuate School of Mines, Columbia College. Thorough Machinist. Three years in shops. Not afraid of climate or place. Blast Furnace Construction a specialty. Address "KNOX," 6 Pine st., New York, N. Y.

Special Notices.

ENGINES AND BOILERS. & Moore. one Double Belt, 20 inches wide, about 75 feet long.

5 ft. by 26 in. Iron Planer. New Haven Mfg. Co.

Die "Waiter
Die Gray & Wood's fraversing
Feed Kol s.
Fred Kol s.
Fred Hol s.
F

One Witherby, Rugg & Richardson 24-in. Heavy Planer, 2 sides. One 50-in. Band Saw. Colladay. One 50-in. Band Saw. Colladay. One 50-in. Band Saw. Colladay. One 50-in. Revolving Bed Pinner. Steptoe & McFarland Dae 24-a. Iron Frame Surfacer. On "Green" Fand Halser. One "Fay" Sin. Moding Machine, 4 sides. 1 lot of chafting and Hungers, various sizes. Or Pulleys, from 3 to 60 inches dameter. On Circular saws, from 6 to 36 inches diameter. In ext Heavy Boller Rolls, 10 ft., between housings, Teal's patent.

escription furnished on application. HENRY I. SNELL 135 N. 3d Street, Philadelphia. For Sale Cheap,

TO CLOSE AN ESTATE.

ONE 10 X 20 VERTICAL ENGINE, in good order ONE HORIZONTAL TUBULAR BOILER, 54 in. Diameter, 12 ft. long, with 48 31/4-in. Tubes, full front, and all complete.

ONE 45 BAKER BLOWER. ONE No. 5 ACME STEAM PUMP.

All the above are in A No. 1 order, and ready to go to work, and will be sold at about onehalf what they cost a short time ago.

For prices and other information, apply to JOSEPH LUMLEY,

144 North Third Street, Philadelphia. For Sale. ENGINES AND BOILERS. Two Wright Automatic Cut-off Engines, 22 X 42

and 22 x 36. Two Dexter Automatic, 40 and 150 H. P. One 16 x 36 Stide-Valve Engine.

One 20 x 36 One 10 X 24 One Corliss Condensing Beam Engine, 500 H. P.

Two Horizontal Tubular Boilers, 4 ft. x 16 ft. One Vertical Tubular Botler, 9 H. P. All the above guaranteed in good working

NEWELL UNIVERSAL MILL CO., 12 Barclay Street, New York.

For Sale.

ROTARY SQUEEZER, in good condition. WROUGHT IRON HAMMERED SHAFT, turned

WROUGHT IRON HAMMERED FLY-WHEEL SHAFT, turned 9 ft. 61/2 in. by 131/2 in. dia.; wheel bearing, 16% in. dia.

12-in. by 20-in. UPRIGHT ENGINE BAND WHEEL, 9 ft. dia. by 16 in, face.

THE SPRINGFIELD IRON CO.. Springfield, Illinois

Hardware Business for Sale.

In one of the most thriving towns of Northern Michigan ; two Railroads ; good farming country Stock fresh and clean : will invoice about \$5000 Falisfactory reasons given for selling. Terms reasonable. Address

"HARDWARE, 27." Office of The Iron Age, 83 Reade St., New York.

LOCATION WANTED. REMOVAL OF BUSINESS.

We are looking for the most desirable location

for manufacture of Agricultural Implements and Machinery Specialties. Must have unequaled facilities for securing raw materials. Iron, Coal and Lumber cheap, and low freights, East, West and South, on manufactured goods.

Desirable propositions from individuals or business committees, giving all particulars, advantages and special inducements offered to secure a long-e-dablished, prosperous and growing manufactory will be considered.

Address, E. W. ROSS & CO., Fullon, N. Y. idered. E. W. ROSS & CO., Fulton, N. Y.

Wanted. Old) IRON and STREL ROPE,

and Iron and Steel of any kind Address MATTHEW GILL, JR., & CO. 1240 North Ninth Street, (below Thompson Street). Philadelphia.

Wanted.

HEAVY CASTINGS AND ROLLS.

Wanted to buy Old Heavy Castings and Rolls of all kinds. Address MATTHEW GILL, JR., & CO., 1240 N. 9th St. (below Thompson St.) Philadelphia

Wanted.

A CUTLERY SALESMAN of experience, to travel to the Jobbing Trade, South. "MANUFACTURER."

P. O. Box 1013, New York City.

MANUFACTURERS' CATALOGUES RESPECTFULLY SOLICITED BY

F. UPTON & CO., COMMISSION MERCHANTS. SAO PAULO, BRAZIL.

Special Notices.

NEW AND SECOND-HAND

MACHINERY.

I Engine Lathe, 20 in. swing, 12 ft. bed. New.
I Engine Lathe, 20 in. swing, 3 ft. bed. 2d-hand.
I Engine Lathe, 20 in. swing, 3 ft. bed. New.
I Engine Lathe, 10 in. swing, 10 ft. bed. New.
I Engine Lathe, 10 in. swing, 10 ft. bed. New.
I Engine Lathe, 10 in. swing, 10 ft. bed. New.
I Engine Lathe, 18 in. swing, 21 ft. ted. 2d-hand.
I Eugine Lathe, 18 in. swing, 21 ft. ted. 2d-hand.
I Eugine Lathe, 17 in. swing, 7 ft. bed. New.
I Engine Lathe, 13 in. swing, 5 ft. bed. New.
I Engine Lathe, 13 in. swing, 5 ft. bed. New.
I Engine Lathe, 11 in. swing, 5 ft. bed. New.
I Hand Lathe, 12 in. swing, 5 ft. bed. New.
I Hand Lathe, 12 in. swing, 5 ft. bed. New.
I Hand Lathe, 12 in. swing, 5 ft. bed. New.
I Hand Lathe, 10 in. swing, 3 ft. bed. New.
I Hand Lathe, 10 in. swing, 3 ft. bed. New.
I Foot-Power Hand Lathe, 8 ft. in swing, 3 ft. bed.
I ron Planer to plane 24 in. x 24 in. x 5 ft. New.
I I ron Planer to plane 24 in. x 24 in. x 5 ft. New.
I Foot-Power Hand Lathe, 16 in. x 26 in. x 1ft. New.
I ron Planer to plane 16 in. x 26 in. x 1ft. New.
I ron Planer to plane 16 in. x 16 in. x 3 ft. New.
I Shaping Machine, 13 in. stroke, 23 in. traverse, 23 in. lather 18 ft. New.
I Shaping Machine, 10 in. stroke, 23 in. traverse, 22 in. long, 2 tables. Second hand.
Shaping Machine in in. stroke, 23 in. traverse, 12 in. long, 2 tables. Second hand.
Four-Spindle Gang Drill Press. New.
Four Spindle Gang Drill Press. P. & W. 2d-hd.
Four-Spindle Gang Drill Press. P. & W. 2d-hd.
Four-Spindle Gang Drill Press. P. & W. 2d-hd.
Heavy Power Milling Machine. New.
Heavy Power Milling Machine. New.
Heavy Power Milling Machine. New.
Heavy Contenting Machine. New.
Heavy Power Milling Machine. New.
Heavy Power Milling Machine. New.

Square Aroor Fox Lathe, for brosswords. New. 45/6 in. Centering Machine. New. 3 in. Curting-Off Machine. New. 45/6 in. Cutting-Off Machine. New. Horizontal Nut Tarper for 3-16 in. holes. New. Screw Stotting Machine. New. Turret-Head Screw Machine, No. 2, with wire feed. New.

1 Horizontal Nut Tai per for 3-16 in. holes. New.
1 Screw Slotting Machine, New.
1 Turret-Head Screw Machine, No. 2, with wire feed. New.
1 Emery Grinder on Stand. New.
5 Emery Grinders for bench wo k. New.
9 Pollshing Frame, 2d-hand.
12 Pair Pollshing Stands for wood wheels. 2d-hand.
18 Pair Pollshing Stands for wood wheels. 2d-hand.
18 Stam Hammer. 3½ in. x 7 in. Cylinder. New.
19 No. 19 Stands for wood wheels. 2d-hand.
18 Stam Hammer. 3½ in. x 7 in. Cylinder. New.
19 No. 19 Stands for wood wheels. 2d-hand.
18 Stam Hammer. 3½ in. x 7 in. Cylinder. New.
19 No. 19 Stands for 10 year Presses. 2d-hand.
18 Stam Hams No. 12 Fower Presses. 2d-hand.
18 Stam Hams No. 13 Fower Presses. 2d-hand.
18 No. 18 Adjustable Inclined Power Press. New.
18 No. 18 Adjustable Inclined Power Press. New.
18 No. 18 Crew Press on Legs. New.
18 No. 2. Adjustable Inclined Power Press. New.
18 No. 18 Crew Press on Legs. New.
18 Toot-Power Punching Press to punch ½ in. hole in ¼ in. iron, New.
18 Toot-Power Punching Press to punch ½ in. hole in ¼ in. iron, New.
18 Toot-Power Punch to punch 3 in. 16 iron.
19 Ower Siliting or Circular Shear for No. 9 iron.
19 Ower Siliting or Circular Shear for No. 9 iron.
19 Ower Siliting or Circular Shear for No. 9 iron.
19 Carled Bar Iron Cutter for 1 in. ir. n. 2d-hand.
19 In. Fater-on Forge, complete, Second-hand.
19 Grindstones and Fra ves. New.
18 Large Lot Fulleys and Hangers. Second-hand.
20 Lathe Chucks different sizes. New.
21 Scroll Saw, complete. New.
22 H. P. Horizontal Stationary Engine. New.
23 H. P. Horizontal Stationary Engine. New.
24 H. P. Horizontal Stationary Engine. New.
25 H. P. Horizontal Stationary Engine. Second-hand.
26 H. P. Horizontal Stationary Engine. New.
26 H. P. Horizontal Stationary Engine. New.
27 H. P. Horizontal Stationary Engine. New.
28 H. P. Horizontal Stationary Engine. New.
29 H. P. Horizontal Stationary Engine. New.
20 H. P. Horizontal Stationary Engine. New.
21 H. P. Vertical Stationary Engine. Second-hand.
21 Locomotive Boiler, 10 horse-power. Good as new.
22 Loc

If the list does not contain what you want, write us. J. M. BADGER,

49 DEY STREET, New York City.

For Sale. A clean stock of Builders', Shelf and Housekeeping Hardware and Cutlery in one of the larger cities o Ohio. Goods all new and well arranged, and location of store could not be beaten for securing desirable trade. A rare opportunity for any one desiring to engage in the Hardware Trade.

Address

Trade.
Address
Office of The Iron Age, 83 Reade St., New York.

FOR SALE. Extra Heavy

24-INCH LATHES Strongly geared: also Heavy and Improved 36 inch Planers. Good workmanship and material. Price very low.

B. GRAVES LOUDEN.

22d st. and Washington ave..
Philadelphia.

For Sale.

A First-Class Hardware and House Furnishing Busine-s, situated on the corner of the best business street in the city; doing a good business; has been established over 20 y-ars. Propretor's ill health is toe o-ly reason for s-lling. A rare opportunity for an active man with capital.

Address F. R. STOUF,

Box 84, New Brunswick, N. J.

Acme Skates.

The enterprising house of HENRY BROOKS & CO., 115 Milk Street, Boston, has taken another important step in securing a very large stock of the celebrated FORBES PATENT ACME SKATES, which they are offering at prices which command the instant attention of buyers.

Wanted.

Oily Wrought Iron Turnings and Cast Iron Name quantity, point of delivery and lowest

JOS. J. LIPPINCOTT & CO., 131 So. Fourth St., Philadelphia, Pa.

Controlling Interest in Hardware Store and Tinware Store for sale.

Situated in one of the best towns in Southern New York. Doing business of \$50,000 per year Business paying well. Reason for selling, in manufacturing business that takes nearly all my time. Address "X, 32,"
Office of The Iron Age, 83 Reade st., New York,

Hardware.

An excellent opportunity to engage in the whole-sale trade for one who can command \$25,000, or would like to join hands with a good live concern in the south or Northwest, and put in as capital the stock, which is in excellent condition and well assorted.

"C. W. C." Address Office of The Iron Age, 36 and 38 Clark St., Chicago, Ill

Special Notices.

New & Second-Hand Machinery.

| Engine Lathe, 10 in. x 3\(\) ft. | each, Engine Lathes, 11 in. x 4 and 5 ft. | each, Engine Lathes, 11 in. x 5 and 8 ft. | each, Engine Lathes, 11 in. x 6 and 8 ft. | 13 in. x 6 and 8 ft. | 16 in. x 6 ft. | 16 in. x 6 ft. | 17 in. x 6 ft. | 18 in. x 6 ft. | 19 in. x 6 ft. |

SECOND-HAND.

Engine Lathe, 16 in. x 6 ft.
euch, Engine Lathes, 18 in. x 6 and 8 ft.

Planer, 2 x 24 x 5 and 6 ft.

3 x 30 x 8 ft.

5 o in. x 50 in. x 17 ft.
io-in. Shaper.
2-Spindle Edging Machine.
Bolt Cutter, to take sizes to 134 inch. Merriman,
Lincoln Pattern No. 2 Millers.

All kinds Machines.

All kinds Machines.

All kinds Machinists' Tools and Supplies. NEW YORK AGERCY OF THE TANITE C.D., GRANT & BOGERT MACHINE TOOL WORKS, and for the NEW POLISHED SMAFTING.

H. PRENTISS & CO., 42 Dey St., N.Y.

For Sale.

The Industrial Works of Shamokin, owned and successfully carried on for a number of years by the late Wm. Brown, deceased, consisting of Foundry and Machine Shop, and a large stock of Patterns regarded as pars of the property. Boiler Shop, Black-mith Shep and Factory for the manufacture of heavy coal screens. Well located in the borough of Shamokin, Pa.. with the best facilities for shipping by rall, and surrounded by a district contributing all the work that a shop of that kind can possibly turn out. Easy terms of payment are offered to suit a purchaser of limited capital. For list of Tools and further particulars apply to WM. MCLVAIN & SONS.

Manufacturers of Boiler Plate and Tank Iron, Reading, Pa.

For Sale.

BRIDGE AND CAR MACHINERY. Three-in. Boit Cutter, 1½-in. Double Head Automatic Roit Cutter, 3-in. Nut Tapper, 33-io. Drill Press, 2 Power run hes, 1 Power Shear, Kotary Pianer, Cut-ting-off Machine, Double Chord Pin Lathe, 11 Forges, Fridge Erscting Tools, Anvils, Swedges, Tong, Button Sets. Hammers. Ac.

ets. Hammers, & c. For particulars, address S. M. YORK, Cleveland, Ohio, or call on J. L. DOLE. 180 Center St., New York.

Wanted.

OLD MALLEABLE SCRAP. State lowest price, point of delivery and quan-

SITES & GILL Dealers in Scrap Iron.

222 and 224 So. Third Street, Philadelphia, Pa. THE SALE OF

Hardware Specialties or other Merchand'se suited to New England market-to parti-e in good credit or for cash-will be attended to by the subscribers Send price list, with commissions allowed, to

B. D. WASHBURN & CO. Box 3405, Boston P. O.,

Hardware Store for Sale.

In a Manufacturing Town of 10,000 inhabitants, a Hardware Store, established eight years and doing largest business in their line. Stock will inventory \$6000. Will sell all or half interest to inventory \$6000. right party. Address

"D. O. C., Office of The Iron Age, 83 Reade St., New York.

For Sale.

Bacon Hoister, cable and appurtances complete: nearly new, New Bacon Hoister, New Improved Blake Crusher, New Iron Buckets,

Address
THE WEED IRON & MINING CO.,
Weed Mines, New York. Weed Mines, New York.

Nos. 2, 3, 6 and 7 Sturtevant Blowers; Nos. 2, 4, 22, 33 rnd 30 do. Exhausters; No. 2 Root Blower and No. 1 Baker do. (positive pressure); Vertical Engines, 1 x 4 and 2/2 x 5; Horizontal do. 1/2 x 2/6, 3 x 6 and 8 x 20; Planers, 20 x 20 x 5, 10 x 20 x 6 and 30 x 30 x 8; Hoisting Engines, 9 x 12, and 6 x 12, with boiler. Have you any Blowers, Engines, Boilers and Machine Tools, &c., to sell or buy? Send exact describition to

end exact description to C. R. EIGELOW, M. E., 18 New Church Street, New York City.

A Good Stove and House Furnishing Business in one of the most thriving cities on the Missouri River is For Sale Cheap, on account of illness of owner. Stock will invoice about (\$400) four thousand dollars. Address

For Sale.

J. H. MANNY, No. 84 Lake Street, Chicago, Ill.

Stock of Hardware, Stoves and Tinware in the best town in Southern Minnesota. Population 3000; growing rapidly. Nice, clean stock; will inventory about \$6000. Good cash business established. Satisfactory reasons given for selling. Address

For Sale.

Post Office Box 460, A bert Les, Minn. For Sale.

A good, clean stock of Hardware, Stoves and Tinware in one of the most thriving towns, of 3000 inhabitants, in Eastern lowa. Stock about \$8000. Reasons for selling, am obliged to leave the store for health. "F. B.," Address

Office of The Iron Age, 83 Reade at., New York. Office of The From Agr., an accuse as, the state of the control of MA

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Special Notices.

To Brass Foundries. To Brass Manufacturers.

Our new foot press, for cutting off GATES from brass
stines by FOOT power, is now ready. Weight, 286
. Price complete, \$5.00, net. A boy can operate
easily. We warrant them to give the most perfect
isfaction. PEERLESS PUNCH AND SHEAR CO..
PEERLESS W. Dev Ytreet, . ww York

For Sale or Lease.

A Large Two-Story Brick Factory,

A Large IWo-Story Drick Factory, A councily Machine Works, at Pearl River, N. Y., on railroad depot, 25 miles from New York City, and railroad faculities unexceptionable, on the line of the New Jersey and New York Railroad. The property contains 40,000 square feet floor space, with one 80 H. P. Engine and Boiler, 700 ft. 2-unch ing snafting and pulleys, main belts, steam heating and water pipes throughout the building. A splendid from foundry, 70 ft. by 90 ft., with one from smelting cupols with Mackenzie blower, brass furnace, core oven, blacksmith shop, patern vaults, annealing oven, etc. The property can be bought or leased on liberal terms. For further particulars, price, terms, etc., address J. E. B. & Co., 113 Liberty st., New York City, or Pearl River, Rockland Co., N. Y.

For Sale.

The largest stock of New and Second-hand Engmes, Boilers, and general Machinery in the West. Send for Catalogue. Hoisting Outfits for Coal dining and other purposes a specialty.

WARREN SPRINGER 195 to 219 South Canal St., Chicago.

For Sale.

Second-hand

DROPS and LIFTERS.

BEECHER & PECK, Lock Box 122, New Haven, Conn

STEAM PUMPS

For Sale.

A large number of Steam Pumps of ali makes, and ranging in size from small tank or boiler feeds up to very heavy service machines. While the stock lasts good be rigains are open for Miners, Water Works, kolling Mills, Furnaces, or any one needing to move fluids by steam.

Call upom or address

JNO. A. HINCKLEY,

Purchasing Agent of the United Pipe Lines,

Oil City, Pa.

For Sale.

MACHINES FOR MAKING PICKS, MATTOCKS

AND AXES, With Solid Punched or Adze Eyes.

T. & CO., Box 25.

Office of The Iron Age, 83 Reade st., New York.

For Sale.

TREBLE AND DOUBLE-GEARED 25-INCH ENGINE LATHES,

from new patterns.

GEORGE A. OHL & CO., East Newark, N. J.

Valuable Iron Property for Sale.

Adiable Hull Tupletty IUI Sails.

An Iron Property in Central Pennsylvania on the main line of the Pennsylvania Railroad. Large bodies of Hematite and Fossil Ores, well developed. Modern appliances for the preparation of the Ores. Situated close to the coal seams of the Clearfi-id, Broad Top and Alleghany Mountains. Coke from Connelisville can be laid down at \$2.35 per ton. A ton of Pig Iron can be made for about \$15 per ton, exclusive of interest on plant. The property has one Charcoal Furnace and Forge, and an abundant supply of Timber for making Charcoal. Satisfactory reason can be given for selling. Apply, for further particulars, to WM. DORRIS, Huntingdon, Pa.

For Sale.

CAST IRON HOT-BLAST PIPES-THOMAS PATENT.

For Sale.

An oli and well-established Piping and Plumbing Busines for sale, in a thriving town in Eastern Massachusetts. A good trade established, with henry of work on hand: employs 12 to 15 hands. In connection with above, a thorough and established Steam Heating Apparatus for which we have a complete set of Patterns. The town is at present putting in "ater Works which will increase business. Address "P. O. BOX 42."

"P. O. BOX 42." North Attleboro, Mass

Imported Gas Engine For Sale.

One 15 H. P. Imported Otto Gas Engine, in per fect order, and the finest flaished Gas Engine in he country. Can be delivered at once.

GILBERT LOOM CO., Worcester, Mass.

Wanted.

A Partner with \$5000 to \$10,000 in a Foundry and Machine Business, established in 1824. For pardculars, inquire of I. H. COLLER

Poughkeepsie, N. Y.

Burnt Iron-Grate Bars, Cylinders, &c.

WANTED

buy Burnt Iron of all kinds, in any quantity, Address MATTHEW GILL, Jr., & CO.,

1'40 N. 9 St., Phila

WANTED. A party owning a complete Plate and Sheet
Mill wants four or five Practical Mill Men, with
Twenty-Five or Thirty Thousand Dollars. As much
more can be readily secured here to build and
operate a Specialty Mill. near Chicago, Ill. No
part of money to be paid for Machinery. Best
bossible mill location and water front secured
without expense to mill.

Address

WHITLOCK,"
Dearhour Street, Chicago,
Dearhour Street, Chicago,

Trade Report.

BRITISH IRON AND METAL MARKETS

[Special Cable Dispatch to The Iron Age.] LONDON, WEDNESDAY, Dec. 5, 1883.

Scotch Pig.-The strike among the miners has been abandoned. The market continues irregular, with values lower. We quote makers' brands:

Coltness, along Langloan,	side	Glasgow																	
Gartsherrie,		14																.5	
Summerlee.	44																	.53	
Carnbroe,	**																	.58	
Glengarnock,	**	Ardrossan						•			۰			**				73	ž/
Eglinton,	**																	.47	
Dalmellington.	6.6																	.48	
Shotts,	8.6	at Leith						ì									ì	.54	i/i
Lighterage fr	om	Ardrossa	n	t	0	(3	la	3.	31	Z,	()	V	V.	į	8		1/	1

Cleveland Pig.-The market is weak, follows, f.o.b. shipping ports: Middlesboro' No. 1 Foundry..... No. 2

.....85/6 @ 36/ Bessemer Pig-Is without change to note. the market ruling irregular at unchanged figures, viz.: W. C. Hematites, 46/6 @ 47/6 for mixed lots, Nos. 1, 2 and 3, equal portions, f.o.b. shipping ports.

Manufactured Iron-Is irregular. We

		£	s.	d.	£		S.	d.
Staff. Ord.	Marked Bars	8	10	0	On.			
6.6	Medium "	6	5	0	(a)	6	15	0
6.6	Common "	6	0	0	00	6	5	0
Hoops, 20 W	. G. and over.							
" Com	mon Best	2	0	0	(a)	7	5	0
" Medi	um	6	.5	0	@	6	15	0
" Com	mon	6	10	0	(a)			
Sheets, 20 W	. G. and under.				24			
" Ordi	nary Best	8	15	0	@	9	5	0
" Com	mon	8	0	0	@	8	5	0
	*************	5	5	0	@	5	7	6

Steel Ralls-The market is weaker and quotations are lower. We quote £4. 5/ @ £4. 15/ for Ordinary Sections, f.o.b. shipping ports

Old Rails-Are steady. We quote Old T's £3. 12/6 @ £3. 15/, and Old D. H.'s, £3. 12/6 @ £3. 15/, c.i.f. New York.

Scrap.-The market is steady. We quote Heavy Wrought, £3 @ £3. 2/6, c.i.f. New York. Bessemer Crop Ends, run of the mill, are quoted 60/, f.o.b. shipping ports.

Copper.—The market is a little weaker and prices are lower. We quote Best Selected, £65 @ £66, and Chili Bars, £59 @ £59. 10/.

Tin-Is irregular. Straits, Ingot, spot, is quoted £85. 15/ @ £86. 5/, and futures, £86.

10/ @ £87, 5/, Tin Plates-Are a little weaker. We

quote Tin Plates, 10 x 14, 1st qual. Charcoal...19/6 @ 21/6 2d18/6 @ 19/ 1st "Coke 17/6 65 18/ 2d " 15/9 62 16/3

Spelter-Is steadier. Prices are unchanged. We quote Ordinary, at shipping ports, £15. 7/6 @ £15. 10/.

Lead .- Prices have advanced a little Common English Pig is quoted £12. 5/ @

Freights,-Steam from Glasgow to New York, 4/6@5/; Liverpool to New York, 4/6 @ 5/; Liverpool to Philadelphia, 5/@ 6/6, and London to New York, 7/6 @ 9/6.

TRADE AND FINANCE.

Office of The Iron Age, WEDNESDAY EVENING, Dec. 5, 1883.

The past week has been too much broken to afford a fair index of the general drift of business. Despite holiday interruptions, the tone in nearly all speculative circles has been tone works. Size, 13 ft. x o inches. A bargain.

SHOENBERGER, SPEER & CO.
Pittsburgb, Pa.

Business. Despite holiday interruptions, the tone in nearly all speculative circles has been tone in nearly all speculative circles ha connected with the approaching annual festivities. Interest has been concentrated to an unusual degree upon the Speakership at Washington, but the election of Mr. Carlisle industriously sought, appear to entertain little apprehension of disturbance growing out of radical legislation. As the calendar year. several of them remark in substance. Carlisle's election is not a matter that will affect commercial interests either way." The message of the President, with its accompanying documents convey quieting assurances but the suggestions of the Treasurer with are characterized in unsparing terms.

The dull condition of trade is indicated by the clearing-house returns of the principal cities, which exhibit a decrease of 45 % compared with the corresponding week last year. In New York City some allowance must be made for two holidays this year instead of weak and lower. Hemp and jute quiet. one. Failures continue to increase numerically, although the amounts involved are seldom large. Among the latest is S. M. Meyenberg & Co., silk manufacturers, with liabilities estimated at \$300,000, and several judgments were entered against the wellknown clothing house of John Paret & Co.

The bank statement was favorable, showing an increase of \$915,075 in the surplus reserve, which now stands at \$6,198,975, against \$1,480,075 at the same time last year. The other changes were without significance. The abundance of unemployed money promises a continuance of ease through the remainder of the year, as requirements will be less than usual, owing to duliness in trade. Among the brokers there is a good demand for first-class commercial paper. We quote 60 to 90 days' indorsed bills receivable, 130 Dearborn Street, Chicago. 51/2 %: 4 months acceptances, 51/2 @ 6.

The imports of merchandise at this port during the past week were quite heavy, the total being \$10,303.529, of which \$3,517,319 represents general merchandise exclusive of dry goods. Imports of most of the leading items exhibit quite an increase compared with the previous week. Since January I the imports aggregate \$425.794,350, compared with \$461,596,757 for the corresponding period of 1882. The imports of specie for the week were \$261,484, made up about equally of gold and silver, and making a total since January 1 of \$20,308,000, against about \$6,000,000 for the same time in 1882. The exports of specie were \$388,500, making a total for the year of nearly \$15,000,000, against about \$45,000,000 in 1882. The exports of domestic produce from this port during the past week exhibit a considerable falling off compared with the previous week; the total is \$5,162,712, against \$6,287,181 for the same week last year. The shipments of provisions and flour were up to the usual average, but the movement of petroleum and with quotations unchanged. We quote as cotton is rather slow. Since January 1, the exports aggregate \$327,425,840, compared with \$318,093,470 for the corresponding period of 1882.

The removal of the French prohibition of the importation of American pork has stimulated an advance in prices, which are now about \$3 7 barrel higher than at the opening of the winter packing season, and lard is 13/80 P pound higher. If the proposed method of inspection in France does not mean exclusion, a gradual renewal of this once important branch of our export trade may be looked for with confidence. At present, prices in this market are relatively

too high to permit any important movement. Foreign exchange is quiet and lower, owing to an increased supply of cotton bills. The posted rates are now \$4.821/2 @ \$4.85 for 60 day, in demand bills respectively.

Government bonds were firm, closing as follows:

U. S. 446s, 1891, registered	. Asked.
U. S. 4s, 1907, registered 1231	4 114
U. S. 4s, 1907, registered	11436
U. S. 48, 1997, compon 1991	
CV CV 13	
U. S. 3 per cents 1005	
U. S. Currency 6s, 1895 1274	
U. S. Currency 6s, 1896 1291	
U. S. Currency 6s, 1897 1311	
U. S. Currency 6s, 1898 1831	3 -
U. S. Currency 6s, 1899 1341	G

On the Stock Exchange the market has been irregular, under the influence of speculative movements, but generally prices are slightly advanced. On Friday, succeeding Thanksgiving Day, there was a decided advance, and on Saturday there was much buoyancy, although no new feature of importance was developed. The Iowa pool was much discussed, but no definite arrangement can be expected before December 13. when the parties concerned will meet for a conference. On Monday the choice of of Representatives was used to depress the market, but the disturbance was temporary. On Tuesday there was a pressure to realize, the Villards being especially weak, while Pacific Mail was exceptionally strong. To-day the market was weak from a general desire to sell. Lake Shore declined to 1001/2. Canada Southern to 561/4, New York Central to 1163/8, St. Paul to 981/4, Pacific Mail to 4234, Oregon and Transcontinental to 4334, Burlington and Quincy to 1243%, Lackawanna to 11818, Union Pacific to 8434, ex-dividend; Reading to 531/2, Louisville and Nashville to 48 58, Texas and Pacific to 21 78, and Central Pacific to 6714. As a whole, prices closed at a slight advance on the previous day.

The official statistics of the foreign trade of the United States for October are unex-

	is as follows:			
3	1883. July	Imports. \$58,587,487		Difference. \$4,260,344
-	August	62, 125, 105	64,067,252	1,942,147
)	September	51,554,488 68,325,162	57,840,741 74,925,565	2,786,258 11,700,408

being now a fact, our leading bankers and From January 1 to October 31, the total immerchants, whose opinions have been ports were \$604,280,963, and the total exports \$665,798,358, showing an excess of exports of \$61.517.305 for the 10 months of

In general business, as before observed, the markets are dull, aside from speculative influences. In dry goods the quietness prevailing during the last two months continues Meanwhile, as a consequence of several heavy failures, the trade have adopted a reference to rehabilitating the trade dollar policy of liquidation and contraction, characterized as "a silent panic." In breadstuffs flour is weak, in some instances leading to more inquiry for export. Wheat is quiet and firm. Corn is stronger for spot Coffee is dull for Brazil grades, on a basis of 121/20 for fair cargoes. Cotton is Hops stronger at 27# @ 28#; exports moder-Leather, steady. For molasses, slow trading; New Orleans is quoted 57¢ @ 58¢. Petroleum quiet. Provisions are advancing mess pork is quoted 14¢ @ 14½¢. Lard like a cork on troubled waters "-influenced by the prices of corn. Dairy products are in buyers' favor. Sugar-prices have a lower missed as few others will be. tendency. Tobacco is firmly held. In freights, accommodation is most sought after | tically the same as that described last week. for ports in Great Britain, there being comparatively little call for the Continent

MINING STOCKS.

The closing quotations for mining stocks were as follows:

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Ś	. H.	á	è	ŀ	Š.	2	1	10	4	W									,					-	31.9		1	. 1	

Asked. 1.00 89 1.85 entral Ariz 3.50 100 10 arlem.... orn Silver. 6.75 Little Chief...
Navajo...
N. Belle Isle...
N. Belle ...
Ori. and Mil...
Pipe Line cer
Robinson Con
Sierra Grand. 3.50 58 1.00 Unadilla

GENERAL HARDWARE.

Manufacturers and the large dealers are at present more occupied in closing up the season's work and forecasting the trade of the coming year than in filling orders. Different views are expressed as to the outlook for spring trade, some being disposed to regard the prospects for Iron and Hardware as far from flattering, while others look hopefully upon the course of business for the coming year. There are few changes in prices to be noted-less, in fact, than is usual at this season, and the impression gains ground that there will not be many important changes, but that spring trade will open on about the present basis of prices. There is nothing in the market at present to justify and sustain material advances, and on most goods further concessions cannot well be afforded.

the most part limited to small orders, with a moderate activity in holiday goods

The many friends of the firm of Janney, Brooks & Co., Minneapolis, Minn., will regret to hear of the death of Mr. F. W. Brooks, which occurred at his home on the 29th of November. Less than two weeks ago Mr. Brooks was attacked with typhoid pneumonia, but no special anxiety was felt until a few days ago. On Tuesday night he seemed better, but on Wednesday he commenced to sink rapidly, and death ensued a few hours later. Mr. Brooks was one of the most promising and active business men of Minneapolis, and his house is well known to Mr. Carlisle for Speaker in the House the Hardware trade in this city. By his integrity, business ability and energy, he gained the thorough respect of all who knew submit to the inevitable, the 'survival of him, and many tributes are paid to his charthe fittest.'" acter and worth. Born in this State some 50 years ago, Mr. Brooks passed his boyhood Creek, and was subsequently in the same usiness for several years in Chicago. was also for a short time with Messrs. Hart. Bliven & Mead, and another Hardware house of this city. In 1874 he became one of the firm of Janney, Brooks & Eastman, which a short time since became Janney, Brooks & Co., in which he had charge of the financial department. In addition to his own business, Mr. Brooks was president of the Board of Trade of Minneapolis, and took a prominent part in all matters connected with the advancement of the city's interests. The Minneapolis Daily Tribune of the 20th ult .- the morning his death was announced-speaks of him in these appreciative words:

The death of Mr. F. W. Brooks, president of the Minneapolis Board of Trade and of the fittest' as the only remedy for exist-member of the leading jobbing firm of Jan-ing evils. The experiences of the past, howney, Brooks & Co., is recorded in the Tri-'s city columns. We do not perform a perfunctory duty nor use the language of demise would be esteemed so great a loss or occasion a sorrow so general and profound. The sad event will temper the festivities of where Mr. Brooks has to-day in many homes never been a visitor, but where his worth and his courtesy had made his name and charac-ter familiar. He was almost an ideal man of affairs. His naturally brilliant mind was en riched, refined and disciplined by university culture: his indoment was tempered and given strength and poise by a long and successful career in business life; his domestic and social qualities were developed and quickened by relations and surroundings in home and socie alike helpful and delightful. Public-spirited in an eminent degree, he lost no opportunity to serve effectively the city of his home Clear-visioned, he was carried away by no prosperity, however signal, and cut down by no reverse, however serious. Affable in every relation of life, he was inflexible in matters involving principle, and no man was in doubt as to where he stood. In the business and social life of the city he will be

The situation of Barb Wire remains prac-Prices are firmly maintained, and manufacturers regard the future with confidence We continue to quote 74 cents per pound for ordinary lots and 6 cents per pound for large quantities.

The supply of Nails is not more than fair, and buyers are often unable to get all they need at one establishment, yet prices are not being sustained at the figures named last viding line between the Atlantic and the

week. The tendency seems to be ever down

As will be seen by a special dispatch from Pittsburgh, a very fully attended meeting of the Western Nail Association was held yesterday in that city, when the subject of the stoppage of the Nail machines, December 12, as proposed in the resolution of November 14, was fully discussed and finally defeated. This resolution was to the effect that there should be a six weeks' stoppage after December 22. The disposition among those present was very generally in favor of taking this action, but it was found impossible to obtain the unanimous consent of the Western mills. This failure to agree together with the fact that it was considered improbable that the Eastern Association would join in the movement, led to the decision that there should be no cessation in the manufacture as proposed.

We continue to quote retail prices at \$2.80 to \$2.90, while large lots are heavy at \$2.75, the market being in buyers' favor.

A Pittsburgh Nail manufacturer depre cates the open discussion of the condition of the Nail trade, and alleges that it has a demoralizing effect on buyers. His letter concludes as follows: "Speaking of this matter, one of our Western customers remarked that after a while his customers will begin to think that Nails grow on bushes and are shaken off into kegs.

From a company which has but recently engaged in the manufacture of Nails in Eastern Pennsylvania, we have received the following communication:

"Our experience in the Nail trade is mited. Thus far we have been able to limited. dispose of our product without cutting prices, and believe, if we continue to make a first-class Nail, we will have no trouble to sell it where it is known. For several weeks you have mentioned that 'new factories' striving for trade have caused some cutting of prices. As far as we are concerned, the cutting has been done by the older makers. In two instances in the last than for a few weeks past. The volume of have been compelled to accept 'cut prices' after the Nails have been delivered. In the ten days when we have made sales the agents after the Nails have been delivered. In the territory we have been canvassing dealers are not carrying any stocks, and are doing a are not carrying any stocks, and are doing a hand-to-mouth business. A great mistake is being made by some parties, or their agents, in advising purchasers to 'hold off; that Nails will probably sell to \$1.90 or \$2, as they did in 1878.' Before that happens Pig Iron, Coal and labor will all have to fall to much lower figures, and we do not believe there are any parties very anxious for that. Our opinion is that a first-class Nail, at a fair price, is in reasonable demand, and will continue to be for some time.

> A Southern Nail manufacturer favors us with a brief but vigorous communication, as follows :

> "This company will continue to supply its customers at market rates, and while fondly hoping for 'the boom,' will no less patiently

An Illinois Nail manufacturer takes some exceptions to statements which have been at Battle Creek, Mich. After a course of made by several of our correspondents, and study at the High School there, he graduated proceeds to give his views concerning the from Yale College, when he engaged in the outlook in the Nail trade. As a warm advo-Hardware business with his father at Battle cate of the policy of restriction, his communication is of much interest, and we print He it in its entirety, as follows:

"The discussion indulged in as to the past,

present and future of the Nail business covers a wide range, demonstrating many erroneous conjectures as to the causes and effects of the policy of 'restricted production 'upon the manufacturers and the trade since its introduction and adoption in the spring of 1880. Previous to that time many es for the regulation of prices had be adopted and enforced under association rul ings, yet failed for the simple reason that the 'law of supply and demand'—the easiest and surest method of regulating prices—had been violated and disregarded intentionally by many in the association who, through utter selfishness, feigned to believe in the enforcement of the doctrine of 'the survival ever, together with the retirement of some from the business, wrought a change and induced the trial of restricted production in mere common courtesy to the departed the spring of 1880, which policy alone, with-when we say there are few citizens whose out reference to the constantly increased productive capacity, aided temporarily by the labor strike of 1882, has maintained, perpetuated and protected the Nail interest of the country from the the country from the unremunerative and bankrupting status of nearly every other department of the iron and steel business of the country. I was in Wheeling when there were but 12 Nail machines in that now great center of the world, and am familiar with the history of the development of the Nail business in the West since 1843, having been directly connected with it from that date to the present time, yet I have never known a period of time from 1843 to 1880 when the cry of overproduction not made. Neither have I known v there was not found great difficulty in maintaining agreed prices. Therefore, I have no hesitancy in saying that I have not known, in my practical experience, such a result as has followed the wise co-operating policy of restricted production adopted by the Nail manufacturers of the West from 1850 to the present time. It has had its beneficial efpresent time. It has had its beneficial ef-fects upon Nail manufacturers east of the Allegheny Mountains, who have industriously improved the time of the stoppage of the Western mills by throwing their surplus product into the West in competition with the Western manufacturers. I am at a loss, however, to know why the Eastern manu-facturers should not heartily co-operate with the Western manufacturers in all measures pertaining to the general interest of the Nail trade, especially nowadays, when the rail-road facilities of the country disregard the

Western Nail Association's fields of operation. If the manufacturers composing the Atlantic Association act wisely in the future by cooperating with the Western Association, they will do well; otherwise the road to bank-ruptcy or forced stoppage of their machines very short one

The future of the Nail trade depends, in my judgment, more upon the universal co-operation of all the Nail manufacturers in the East and West in their joint adherence to the enforcement of the policy of restricted production than upon the increased or de creased productive machinery, for the good reason that new machinery will be built as long as there are men found who think other branches of the Iron business are better than the one in which they are

It is stated by the Secretary of the American Iron and Steel Association that in August, 1882, there were 68 Nail factories, which contained 4167 machines, having an estimated capacity, full running time, of 0.500,000 kegs per annum, while the actual product per annum never exceeded 6,147,097 kegs, or about two-thirds of the productive capacity. We are also informed by the same authority that there are now 74 Nail factories containing 5008 machines, with an annual capacity, full 12 months' running time, of 11,376,000 kegs. Many of the machines said to be now under construction will in all probability never be built, while enumerated in the list to be put in operation by January 1, 1884, cannot be put in shape to make Nails before July 1, 1884, to my personal knowledge; hence the 74 factories with 5008 machines will, in my opinion, cover all the machines that will be operated up to July 1, 1884, especially so when 286 of the 5008 given have been for years, and are now, like many of our old army officers, on the retired list. It is, therefore, safe to estimate the product of 1883, on the basis given, at not to exceed 7,500,000 kegs. Neither do I think that the product of 1883 will fall below the estimate, as the mills East and West have all run steadily from the 1st of January, 1883, to the present time, and will continue to run until the 22d of December, with the excep-tion of a stoppage of all the machines in the West of six weeks last spring and 30 days during the summer—a very unusual run. And yet the demand has been fully equal to the supply and prices have remained reasonably satisfactory up to within the past 30 days, since which time prices have declined to \$2.65 because of the near approach of winter, the usual time of a general suspension of business in the Nail market. Judgfrom the present outlook, I am strongly inclined to the opinion that the exercise of the same good sense that characterized the Western Nail Association last spring, in our arrangements for the business of 1884 will give us all a reasonably prosperous year's business, though we may expect and be prepared to work on closer margins than we started on in the spring of 1883."

A New England Nail manufacturer writes us as follows:

"The increase of Nail machines has been much greater than the demand requires, and the outlook for any profit from manufactur-ing Nails is very bad. The increase of machines has been much greater in proportion in the West than in the East, and consequently there is much greater necessity of curtailing the production in the West than here. Had not the West increased its production faster in proportion than the East, we think the demand at the present time would be nearly, if not quite, equal to the production, but, as matters now are, the future prospect is very discouraging in Nail manufacturing."

The Pacific Slope contributes its share to the discussion of the situation of the Nail trade in the following letter from Mr. G. J. Walker, superintendent of the Pacific Iron and Nail Company, Oakland, Cal.:

"We deem the outlook for the Nail mills as quite serious. Combined action on the part of all the manufacturers of the United States is really necessary to the existence of the business. We do not understand why the Eastern Association is allowed to run at the expense of the Western, nor why the Western manufacturer is compelled to pay higher prices for the various labor for making Plate and cutting Nails. As the matter now stands, the Eastern manufacturer can proand also gets the benefit of a higher market. Of course, there is but one solution of the case—either the Eastern Association are possessed of more business ability and tact managing their workmen, or their Wrn brethren have been "bulldozed" ern brethren have been long and persistently by the labor associa-tion that they have come to accept the situation as a part of the profit and loss ac-count. The differences paid by these two associations, in some cases but a few miles apart, would be an interesting study. There may be some glory in shinning along on a small margin that will no doubt compensate the Western manufacturer partly for the curtailment of a business profit, but when the life of a business is sapped until the death struggle comes on, it would be well to look for a swift and sure remedy. I am sure that manufacturers, as a rule, are willingyes, anxious-that their help should have a comfortable support, but not that said help should absorb the capital and leave them the experience only. The prospects of trade should absoro ... The prospects of experience only. We anticipate general embarrassment and financial disaster to many, un-less there be speedy and harmonious general action regarding fair and uniform rates for the same labor, and intelligent regulation of production to the wants of the country.

The following letter from a well-known Western Nail manufacturer will be read with interest, giving as it does his views both upon the delivery question and the outlook for the Nail trade :

"We concur in most of the views expressed upon this subject of deliveries, and believe that whatever system tends to make manufacturers' prices uniform to the trade is the best. If the Eastern manufacturers York, it is an easy matter for the Western that this and many other lines of goods are manufacturers to ascertain the rate of freight between New York and the lead-jobbers to sell in competition with manufacturers cannot afford to

that it is difficult, if not impossible, for Eastern competitors to know just what their competition is. The freight must be added to the cost of the goods, and it will be better for the buyer to add it after it is paid than for the manufacturer to add it before it has been earned or even ascertained. We think the outlook for the trade is fair. Buvers have been careful for some time and stocks are uniformly light, and the legitimate demands of the country must find their way directly to the manufacturers, with whom it now rests to hold prices steady by control-ling production until the demands of the country will employ all their machinery. We think the tendency is that way."

The matter of syndicate purchases has been for some time a perplexing one to manufacturers and jobbers, and has also a special interest for smaller buyers. As discussing the subject in some of its aspects and opening a broad field, we take pleasure in laying before our readers the following communication:

To the Editor of The Iron Age: I have been engaged in the jobbing of Hardware for several years, and am now interested in a manufacturing business, recently established. I read *The Iron Age*, and an old neighbor keeps me posted upon local items of interest to the trade. Having noted the discussion upon the question of free deliveries provoked by "Jobber's" letter, which appeared in your columns a few weeks since, it occurred to me that the directors of our company might gain some valuable informa tion for their guidance from the experience of older manufacturers, if such manufacturers would consent to give, through the columns of your valuable paper, their general views upon the best means for disposing of the

product of a factory.

Having received a jobber's education, I, myself, may be unduly prejudiced in favor of distributing goods through the medium of wholesale houses, and so arranging schedules of prices that jobbers will be sufficiently re-munerated for the distribution to insure their best efforts in making large sales. This is an old-fashioned plan, and one which I understand is gradually becoming obsolete Under this system manufacturers formerly either by combination or by virtue of mo nopoly, dictated the prices at which their products should be sold by jobbers, or, leaving the various jobbing markets to regulate themselves, supplied their customers (mak-ing factory deliveries or equalizing freight with other manufacturing points) at prices based upon quantity taken, financial responsibility and promptness of payment. Through dictating prices at which their wares should be uniformly sold, manufacturers drifted into the habit of delivering to all jobbing towns, and to this cause, I apprehend, very much of the free delivery which your cor-respondents so generally deprecate is chargeable. In placing the products of a new factory upon the market I am led to the query: If goods are made, for example, in New York, ought they not to sell in Chicago for a price covering the cost of transporta tion from this or a competing factory! Or should the prices be uniform for delivery in New York, Chicago, Omaha, Salt Lake City, San Francisco and Pekin?

Another question: If prices for jobbers' ales to the trade are established by manufacturers, should there be exceptions made verning parties who carry no stocks? Or jobbers' prices to their customers are not dictated by the manufacturers, should large and small jobbers and retailers be supplied at the same prices? I am led to ask these ques which might ordinarily seem childish, on information as to the latter-day prac tices of some manufacturers, and particu-larly am I led to ask them at this time by the letter in your issue of November 22, signed by "Eastern Merchant," and from and from which I quote: "The selling of goods to irresponsible resident buyers who combine the purchases of small houses will lead to the purchases of small houses will lead to more serious loss to manufacturers than any freight deliveries." I learn that certain manufacturers (and this includes some who claim to have their established prices to retailers maintained) sell these so-called irresponsible resident buyers" at the lowest rate to jobbers, and in exceptional cases, where bids are asked upon round lots of goods, at lower than jobbers' rates, and these and retailers at the purchase price from the and retailers at the purchase price from the manufacturer, the middle man receiving a yearly salary for his services. I am told, for example, that the oldest and largest manufacturer of Shovels in New England, who aims to control the price of his goods after they have passed into the hands of jobbers, has been in the habit of selling at his lawest rate to one of the syndicate have his lowest rate to one of the syndicate buy-ers for distribution in lots of five dozen and upward to the small trade throughout the country, and that men who are known as retailers have made for themselves a local reputation for shrewd buying by wholesaling merchants in neighboring towns at than the prices established by the manufac-

These sales were made to the syndicate notwithstanding the fact that the buyer's printed contract with his patrons contained a clause binding him to turn over all his purchases without any commission to him-self—a fact that the New England manufacturer should certainly have been acquainted with before making his broadcast sales at quantity prices. The retail dealers were not restricted, while the legitimate jobbers were compelled by the edict of the manufacturer to hold to the fixed prices. I learn that, as a result, prices were demoralized and the large jobbers, to a man, are working to in-troduce and sell goods which are not branded with the New England manufacturer's name also understand that a well-known brand of Wrenches has passed through the same ex-perience as the standard Shovel referred to, and with the same result. I am told that one of the syndicate buyers has placed an order with a leading manufacturer for his patron's stocks of Green Wire Cloth, the goods to be

ing points in the West, and adjust their prices accordingly; whereas, the Western extremely low prices through the channel of manufacturers are so scattered, and their syndicate sales. He instances the price of rates of freight so varied and changeable, Strap Hinges for the year 1883, and says there are only four or five makers of these goods, with no overproduction, and yet the prices ruling have been ridiculously low during the entire season, claiming it to be the result of spring bids to a syndicate buyer for a round lot of Hinges to be distributed in barrel shipments and upward.

On the other hand, it is said that the leading Saw, File, Lock and some manufacturers of other lines, believing such policy an injurious one, and fearing demoralization of prices, will not sell their goods except directly to the legitimate jobbers and at prices to which each is individually entitled. question which I wish solved, without experiment upon the part of my people, is which is the surest method of building up a permanent business upon a meritorious line of goods—the old-fashioned one first mentioned, or the new-fashioned one of selling to jobbers what they can be induced to purchase, and bidding upon the requisitions of syndicate buyers at prices that will be sure to "take the cake." It occurs to me that if we decide to adopt the latter plan it might be as well to issue but one price list, and that one applicable to the smallest retailer as well as to the largest jobber, as the prices will necessarily soon reach the lowest pos-sible limit and will be alike to all purchasers. I, like many of my fellow manufacturers, would be glad to sell to the jobber, supply his customers and fill the wants of the consumers, but how to do it and foster all branches of the trade, and at the same time not reduce the prices below those that will afford a living profit for ourselves, is the information I solicit from the experienced manufacturers. Will they favor

Yours, truly JONATHAN DUDLEY.

The following letter from a retail Hardware merchant brings up a subject of general interest. Purchasers of Hardware and other merchandise are not infrequently subjected to unreasonable charges for packages and cartage. Whether or not charges are made for these items in the invoice, the matter should certainly be understood by sider the matter. buyer and seller at the time the goods are ordered:

To the Editor of The Iron Age: Knowing that your valuable paper is the mouth-piece of the Hardware trade, from the largest manufacturers or importers to the smallest retailer, I was much interested in the communications in your recent issues in re gard to delivering merchandise. The reading of this discussion brought to our mind a grievance which we, as retailers, have to bear, and which we think should be corrected. We allude to what some jobbers and manufacturers are pleased to style "P. & C.," tacked at the end of each invoice, and ranging in expense to us from 25 cents to \$5. We suppose it means package and cartage, but it sound to us something like "Peanuts and Cigars, or, transposed, it gives "Catch Penny," and that is just what it amounts to. The job ber will say, "Our packages cost us a great deal of money, and we must charge our cus-tomers for them." Well, we suppose their stationery must cost them considerable; why not charge us for the paper the invoice is made out on? The item of postage also must be quite large; why not add another item at the end of the invoice and call it "P. & S."—postage and stationery. In other words, if we are to be called upon to pay any of the expense of packing and shipping goods, why not all? If not all, why any part of it? In the matter of dray-age there seems to be no regularity or consistency. Sometimes it is 50 cents for 50 pounds, and sometimes 15 cents for ½ ton. But why any cartage at all? The jobber does not relinquish possession of and is responsible for the goods until delivered to the sponsible for the goods until derivered to the proper forwarding companies, from whom he obtains a receipt, which he sends to the consignees, when he is very particular to inform them that his responsibility ceases. If the jobber can charge for cartage, why not for the expense of running his elevator that transports the goods from his upper floors, or the expense of loading them on the trucks We cannot see why they could not as consistently make such charges. But perhaps, like the drummer's overcoat, "It's there, shust the same." We have often thought so. If retailers would refuse to pay these 'catch-penny" charges and buy only of

those jobbers and manufacturers who de-liver their goods f.o.b., the silly custom could on be broken up. HARDWARE.

The following communication has been received in reply to the letter of "Retailer, which appeared two weeks ago. To the Editor of The Iron Age: We notice a your issue of November 22 a letter signed

Retailer," complaining that manufacturers o not furnish Screws with their Mortise do not furnish Screws with their Mortise Door Locks. In this connection we beg to call attention to the fact, that it has been the practice of this company for years to pack with all of its Rim and Mortise Door Locks complete fittings, including Screws, so that the Locks, as received by the cus tomer in the paper box, contain everything that is necessary for their putting on.

Respectfully,
THE YALE & TOWNE MANUFACTURING CO.

The association of Lock manufacturers met on Tuesday, and as we go to press are still in session. Among other matters which are under consideration is the question of the advisability of revising the present list prices for Door Locks.

The situation in the Glass market remains unaltered, the strike at Pittsburgh continuing, though it is apparently becoming a hopeless one for the workmen. It is said the following announcement: that there are 30 carloads of Glass at Pittsburgh, to be divided among the members of the syndicate. Since the inauguration of strike, it is stated that 100,000 boxes of Glass have been imported to Pittsburgh. In case the present condition of things continthanufacturers prices uniform to the trade stocks of Green Wire Cloth, the goods to be case the present condition of things continued to the Eastern manufacturers delivered during 1884, at \$1.65 per 100 feet. My informant says this is very cheap, and that this and many other lines of goods are being depressed in price by the efforts of being depressed in price by the efforts of the work of the continued of things continued to the trade stocks of Green Wire Cloth, the goods to be case the present condition of things continued as the continued of the continued of

see the importation increase while their fur- standing on an independent footing, we we naces are cold, and the employers insisting that the large importations must prove to the strikers their assertion that it is better to import than produce at the present cost of production. The demand in this market has fallen off considerably, and there is not the same animation and spirit in it. Prices are accordingly shaded a little, and we now make the quotation discount 60 and 15 per cent. to discount 60 and 20 per cent. in special cases.

A meeting has been held by the Cartridge manufacturers with a view to strengthen the prices and further carry into effect the agreements which were made last September. The result is that the Cartridge market is strong at the late advance, and arrangements are made to secure entire uniformity in prices among the different manufacturers. No change was made in discounts, the quotation remaining as before, at discount 65 and 5 per cent. on Rim Fire found. The price list has not yet been Cartridges, and discount 45 per cent, on Central Fire Cartridges.

We take this opportunity of directing the attention of manufacturers to the "Special Notice" which will be found on another page, in which a house in Europe propor for agencies of American Hardware. With the copy for this advertisement came references to well-known houses here, by whom we are assured that the advertisers are a responsible house, with whom manufacturers may treat with confidence. They desire, it will be observed, arrangements for the sale of all sorts of American Saws, Agricultural Implements, Pitchforks, Rakes, Shovels, Spades, Hatchets and Axes, Mechanics Tools, both for wood and metal working Castings, Furniture Casters, Screw Pulleys, Lamps, Window Shade Rollers and appurtenances, Kitchen Utensils, Enameled Hollow-ware, machines for family use and kitchens, and Leather Belting. It will be worth the while of manufacturers to con-

The demand for Tin Plates has fallen off materially, and the market is getting dull. We reduce our quotations on Coke Tin Plates, as prices are perceptibly lower. Charcoal Tin Plates remain unaltered. There is no special accumulation of stocks here, but shipments from the other side are being curtailed.

place. The competition between the English and American makers is very animated, and lower figures for English Steel are made on Circular Saw Plates, Round Machinery, Swaged and German Steel.

The American Screw Company, Provilence, R. I., under date of December 1, have reduced the price on Rivets and Burrs from 40 per cent. discount to 45 per cent. discount. They have also adopted the following price list on Wire Nails and Escutcheon Pins, a line of goods which they are now making, on which they quote 25 per cent. discount:

be able to make any special styles requand pack goods in any manner. Our are of the most desirable kind solicit your orders. Quotations furnished application to SHERMAN & BROWER, Sole Agents Eastern Tack Com

E. S. Hulbert & Co., Bernardston, May have purchased the entire patent of the manufacture of the Crystal Cutlery, and will soon be in readiness to supply the trade with these goods. It is claimed that this Cutlery is practically indestructible, as the handle will not tarnish with wear. It is in tended to put the handles on Tables. Carvers, Steels and Druggists' Pallettes. write us that the demand for the Double Shear Steel Butcher Knives has more than doubled in the past six months. These goods are the well-known Nichols' brand, and are quoted at a discount of 40 and 10. Messis, Tennis & Wilson, 294 Broadway, New York are their agents, where a full stock may be issued for the Crystal Cutlery, but the price on the medium Knives and Forks will be as follows:

Porcelain Handle (white) Concave Bolster per gross.... Flint Handle, Concave Bolster, per gross ... Subject to a discount of about 40 and 10 per cent

On the last page of our paper will be found the advertisement of the Goodell Spoke Shave, manufactured by the Millers Falls Company, 74 Chambers street, New York. The special points which are made in favor of this article are its circular shape, enabling it to work in a smaller circle than other spoke Shaves, and the fact that one or both nandles can be removed for convenience in using it in cramped places. The tool is handsomely made, and sold at \$12 per dozen subject to a discount of 25 per cent.

The Bay State Iron Company, of Boston have addressed the following letter to their creditors:

Office of the Bay State Iron Company.
No. 2 Pemberton Square,
Boston, December 3, 1883.

DEAR SIRS: We now have the pleasure of informing you that we shall pay at this office, upon the roth inst., to the unsecured creditors of this company, a dividend of 40 per cent. upon their claims against the company as made up to February 10, 1883. This dividend is made from funds obtained by collections and from proceeds of sale of Our quotations on English Steel will show the changes in prices which have taken and the prices which have the prices which have taken and the prices which have the prices which have the prices which have the prices which have the pri trustees, under a deed of assignment dated February 9, 1883, and one-half from a portion of the property which remained in the hands of the company.

Notwithstanding we have made vigorous efforts to sell the real estate and machinery, we have not, as yet, been able to do so for prices which we should feel warranted to accept. We shall continue our efforts in this direction, and believe that, with but a slight revival of the iron industry, which is now, and for some months has been, in an excep-tionally depressed condition, we shall be able to sell this property, and to pay in full all claims against the company. We inclose

STEEL AND IRON WIRE NAILS .- PRICE PER POUND.

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STEEL, IRON AND BRASS ESCUTCHEON PINS.-PRICE PER POUND.

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The Eastern Tack Company, a new concern | herewith blank receipts for this dividend, who are now just putting their goods on the market, introduce them to the trade with

100 CHAMBERS ST., New York, GENTLEMEN: We are now ready to supply a full line of Copper and Iron Tacks, American and Swedes Iron Tacks, Blued and Tinned; Finishing, Trunk, Clout, and Hungariau Nails; Shoe Finders' Goods, &c., &c., &c.; Threepenny Fine Nails; Wire Nails; all made upon machines of newest and most

which please sign and forward to this office for payment. If the whole or a part of your claim is represented by the promissory notes of the company, please forward them with the receipts, that the dividend paid may be indorsed thereon. Sincerely regretting that we cannot, at this time, pay the claims against the company in full, we remain, respectfully yours,

BAY STATE IRON Co., By J. AVERY RICHARDS, Treasurer.

J. AVERY RICHARDS, WALLACE T. FOOTE, GEORGE R. SHERMAN, Trustees.

As the holidays approach there is considerable activity in a limited way in Silver-Plated Ware, and the different manufacturers are offering attractive lines with a number of novelties. In this connection we would call the attention of our readers to the advertisement of the Holmes & Edwards Silver Company, for whom the Alford & Berkele Company, 77 Chambers street, are the special agents.

The firm of Cruttenden & Nicholson, dealers in Cutlery and Fancy Hardware, 431 Sixth avenue, New York, has been dissolved by mutual consent. The business will be continued by Chas. Frederick Nicholson.

The trade in Guns and Pistols remains moderate and unsatisfactory. The demand for these goods has not been as large as usual, and the manufacturers of common grades complain that prices are unprofitably low. Several manufacturers of cheap Pistols are unable to continue making them at the present rates. The demand for better goods is only moderate. There are no alterations in prices to be noted.

It is a long time since the Stanley Werks. New Britain, Conn., whose New York office and warehouse are at 70 Chambers street, have issued a discount sheet, and in the meantime there have been more or less changes in price. The following list of discounts, which they are now sending out to the trade, will be regarded with interest, and while on the most important lines there are no changes, many minor alterations will repay the careful examination of Hardware merchants. The page references are to their catalogue of 1879.

Page. Dis. per cent. 3, Bronzed Capped Butts, with Tips, No. Bronzed Capped Butts, Steeple Tips, No. 45&10 Bronzed Loose Joint Butts, Steeple Tips, 9, Bronzed Loose Joint Butts, Ball Tips, No. 207,
Same list and finish as No. 206,
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Bronzed Back Flaps, Beveled Edge,

310. 90£10 45. Bronzed Square Back Flaps, Beveled Edge, Nos. 312, 314, 316. 90£10 46, Bronzed Inside Blind Butts, No. 318. 90£10 46, " " No. 320. 90£10 46, " " No. 320. 90£10 46, " " Boveled Edge, No. 30£10 924.... Bronzed Inside Blind Butts, Beveled Edge, 08:10 47. Bronzed Inside Blind Butts, Beveled Edge, No.

328 30&10

48, Bronzed Light Inside Blind Butts, No. 330, 30&10

48, Bronzed Light Inside Blind Butts, No. 330, 30&10

48, "No. 332, 30&10

Bronzed Light Inside Blind Butts, Beveled Edge, No. 331. 30&10

49, Bronzed Light Inside Blind Butts, Edge Holes, No. 335, 340. 30&10

49, Bronzed Light Inside Blind Butts, Edge Holes, No. 335, 340. 30&10

49, Bronzed Light Inside Blind Butts, Edge Holes, No. 339, 340. 30&10

50, Bronzed Shutter Butts, No. 342, 346. 30&10

50, Bronzed Shutter Butts, No. 342, 346. 30&10 No. 839.
zed Shutter Butts, Nos. 842, 846.

"No. 844.
Table Hinges, No. 848.
Light T. No. 850.
Berews, No. 852.

Bronzed Sunk Flush Bolts, Nos. 394, 396 388, 400. 50&10
66, 67, Bronzed Barrel Bolts, No. 402. 10&10
66, 67, Bronzed Round Neck Bolts, No. 410. 30&5
68, Bronzed Round Neck Bolts, No. 410. 30&5
68, Tower Bolts, No. 412. 40&10
68, Bronzed Shutter Bars, Planished, No. 450, 134
inches, list, \$1. 30
Bronzed Sliding Door Rail, No. 451, list 124
per foot. 355

Fips, No. 512.
Nickel Plated Loose Pin Butts, Ball Tips, No. Nickel Plated Loose Pin Butts, Ball Tips, o. 514..... Nickel Plated Parliament Butts, Ball Tips,

No. 515. 35 Nickel Plated Parliament Butts, Ball Tips, lined, No. 5154. 37 3, Nickel Plated Parliament Butts, No. 516. 35 M. Nickel Plated Light Parliament Butts, Nos. 518, 520 Nickel-Plated Light Narrow Butts, No. 522,25&10 No. 524,25&10 Loose Pin No. 529,25&10 No. 528,25&10 Nickel-Plated Loose Pin Light Narrow Butt Nickel-Plated Light Loose Joint Butts, No. 532. 25&10
Nickel-Plated Light Loose Joint Butts, No. 522. 25&10
Nickel-Plated Light Loose Joint Butts, No. 25&10 534. S. Nickel-Plated Light Loose Joint Butts,

539 88, Nickel-Plated Narrow Butts, No. 538. 88, 90. Extra Light Butts, No. 540. 90. Back Flaps, Nos. 542, 544... 91. Nickel-Plated Square Back Flaps, Nos. Nickel-Plated Inside Blind Butts, Nos. 550 1, Nickel-Flated 155, 1 Holes, Nos. 558, 560 ... 25&10 5, Nickel-Plated Shutter Butts, Nos. 562, 564, 25&10 6, Nickel-Plated Light Inside Blind Butts, Bev-25&10

| 196, Nickel-Plated Light Inside Blind Butts, Beveled Edge, No. 566. | 25&10 |
86, Nickel-Plated Light Inside Shutter Butts, Beveled Edge, No. 508. | 25&10 |
97, Nickel-Plated Fass Barrel Bolts, No. 570. | 35 |
98 to 101, Nickel-Plated New York City Flush Bolts, Nos. 572, 574, 576, 578. | 35&10 |
102, 103, Nickel-Plated Flush Bolts, Knobs and Slides, Nos. 580, 582 | 580, 104, 105, Nickel-Plated Flush Bolts, Knobs and Slides, Nos. 584, 586. | 35 |
104, 105, Nickel-Plated Extra Heavy Flush Bolts, Knobs and Slides, Nos. 584, 586. | 35 |
108, 109, Nickel-Plated Extra Heavy Flush Bolts, Knobs and Slides, Nos. 584, 586. | 35 |
108, 109, Nickel-Plated Extra Heavy Flush Bolts, Knobs and Slides, Nos. 588, 590. | 35 |
108, 109, Nickel-Plated Extra Heavy Flush Bolts, Knobs and Slides, Nos. 582, 584. | 36 |
109, 100, 100, 1004, 1006, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1002, 1004, 1006 | 1

| Plain Knobe, Nos. 986, 682 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 254 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and finish as 80. 256 | 35 | Stame list and fini

30&10 Nos. 728, 734. 30&10 150, 151, Japanned Loose Fin Butts, Steeple Tips. 55, 10&5 30&10
30&10
No. 76
Same list as No. 726
Sociol Sp. 152, 153, Japanned Loose Pin Butts, Steeple Tips, No. 727
Same list as No. 726
Sociol Sp. 152, 153, Japanned Loose Pin Butts, Steeple Tips, No. 728
Sociol Sp. 152, 153, Japanned Loose Pin Butts, Steeple Tips, No. 729
Sociol Sp. 152, 153, Japanned Loose Pin Butts, Steeple Tips, No. 729
Sociol Sp. 152, 153, Japanned Loose Pin Butts, Steeple Tips, No. 729
Sociol Sp. 152, 153, Japanned Loose Pin Butts, Steeple Tips, No. 729
Sociol Sp. 152, 153, Japanned Loose Pin Butts, Steeple Tips, No. 729
Sociol Sp. 152, 153, Japanned Loose Pin Butts, Steeple Tips, No. 729
Sociol Sp. 154, Japanned Loose Pin Butts, Steeple Tips, No. 729
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Sociol Sp. 154, Japanned Loose Pin Butts, Steeple Tips, No. 729
Sociol Sp. 154, Japanned Loose Pin Butts, Steeple Tips, No. 729
Sociol Sp. 155, 10&5

Loose Joint 822 823, 824 820.50. On the other hand, No. 2 Foundry same list as No. 822 75, 8210 though las sold as high as \$21 for a special brand, Loose Joint Butts, Ball Tips, No. 824 40 176, Reversible Butts, French Pattern, No. 824 40 176, Extra Light Butts, No. 825 50&10 177, Parliament Butts, Steeple Tips, No. 825 50&10 No. 2 at \$20.50 and \$19.50, respectively. Bronzed Barret Bots, No. 404, 408, 408, 408, 107, Parliament Butts, No. 208, 177, Parliament Butts, No. 208, 177, Parliament Butts, No. 208, 178, Parliament B

Nickel Plated Loose Joint Butts, Steeple , No. 506.

Sickel Plated Loose Joint Butts, No. 508.

Skel Plated Loose Joint Butts, No. 508.

Nickel Plated Car Butts, Steeple/Tips, No. 510.30

Nickel Plated Loose Pin Butts, Steeple 183, Loose Inside Shutter Butts, No. 848.

183, Loose Inside Shutter Butts, No. 848.

183, Light and Heavy Strap Hinges, Nos.

184, Loose Inside Shutter Butts, No. 848.

185, Loose Inside Shutter Butts, No. 848.

186, Light and Heavy Strap Hinges, Nos. 185, Light, Heavy and Extra Heavy T delivered.

Solid Link Hinge Hasps, No. 9234, list, 8 inch. \$11.

8 inch. \$11.

Hart's Patent Light Strap, list.

Class No. 228, inch. 6 8 10 12 19 Per doz. pairs, ...\$1.70 2.50 3.50 6.00 Hart's Patent Heavy Strap Hinges, list. 40&10 Class No. 529, inch. 5 6 8 10 12 14 Per doz. pairs, ...\$2,00 2.80 4.40 6.60 9.40 12 Wells' Patent Heavy Strap Hinges, list. 40&10 Class No. 525, inch. 5 6 8 10 12 14 Per doz. pairs. ...\$2,00 2.80 4.40 6.09 9.40 12 Wells' Patent Heavy Strap Hinges, list. 40&10 Class No. 525, inch. 5 6 8 10 12 14 Per doz. pairs. ...\$2,00 2.80 5.15 7.40 10.00 12 Record's Patent Heavy Strap, list. ... 35x 10 Class No. 597, inch. 5 6 8 10 12 14 Per doz. pairs. ...\$2,75 3.80 5.15 7.40 10.00 12 Record's Patent Heavy Strap, list. ... 35x 10 Class No. 598, inch. 5 6 8 10 12 Per doz. pairs. ...\$2,00 2.80 4.40 6.09 9.40 9 Bulk Shutter and Flask Hinges, Nos. \$32, 194. 10 0 Croquet Hinges, Nos. \$39, 198.

Croquet Hinges, Nos. 936, 938... Rolled Plate and Rolled Raised Hinges, Nos

188 Croquet Hinges, No. 198 Rolled Plate and Rolled Raised Hinges, No. 198 Rolled Plate and Rolled Raised Hinges, No. 198 Rolled Plate and Raised Hinges, No. 198 Rolled Plate and Raised Blind Hinges, No. 10 Rolled Plate and Raised Blind Hinges, No. 10 Hart's Patent Trunk Hinges, No. 10 Hart's Pa

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"Hat spring Boths, No. 1834 5.
"Barrel "No. 1836 5.
"Washers, No. 1836, Nos. 1838, 1340, 44&1"
"Hinge Husps, No. 1842 40&1
"Crate Hinges, No. 1844 40&1
"Hasps, Nos. 1846, 1848 40&1
"Hasps, Nos. 1846, 1848 40&1
"Light Inside Blind Butts, No. 1850 4
"Narrow Butts, No. 1854.
"Narrow Butts, No. 1858.

43. Bronzed Back Flaps, Beveled Edge, No. 30&10
44. Bronzed Square Back Flaps, Nos. 30&10
44. Bronzed Square Back Flaps, Nos. 30&10
30. 30&10
30. 30&10
30. 55, 10&5
30. 154, 155, Japanned Loose Pin Butts, Ball Tips, No. 739, same list as No. 728. 55, 10&5
310. 50, 10&10
30. 159, 159, Japanned Loose Pin Butts, Ball Tips, No. 739, same list as No. 728. 55, 10&5
310. 50, 10&10
30. 55, 10&5
30. 154, 155, Japanned Loose Pin Butts, Steeple Tips, No. 730. 55, 10&5
310. 50, 10&10
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30. 55, 1 No. 730.

Japanned Loose Pin Butts, Ball Tips, No. 731.

same list as No. 730.

So. 1025

to be large enough to absorb current production. Sales are mainly of small lots, for im-

any material reduction in prices. Rumors prevail that No. 1 Foundry Irons have been Loose Joint Sin. 50x 10 Broad "808. 50x 10 Sold at \$19, delivered, but authentic information on that point is decidedly lacking. Some sales may have been made as low as \$20, but the majority of transactions have been at \$20.50x 10 the majority of transactions have been made as low as \$20.50x 10 the majority of transactions have been ma old at \$19, delivered, but authentic informa-No. 2 at \$20.50 and \$19.50, respectively.

50\$10
Gray Forge has been steadily held in this
market for some time, but in view of lower 30&10 prices in Philadelphia, sellers are not now the price to be modified if Rails fall to lower cases in which Gray Forge is made a specialty. The general selling prices may be feeling more confidence in the situation, quoted as follows: No. 1 Foundry, \$20.50 notwithstanding the fact that the winter @ \$21 at tidewater, with sales of fancy must be passed with but little work for some brands at various prices up to \$23; No. 2 Foundry, \$19 @ \$19.50; Gray Forge, \$16.50 bottom has been reached. @ \$17.50 at furnace, equal to \$17.50 @ 19, are now asking \$35.50 for Rails to be deliv-

| 184, 125, Light, Heavy and Extra | 184, 125, Light, Heavy and Extra | 185, Long Chest Hinges, No. 910 | 60&10 | 185, Long Chest Hinges, No. 910 | 60&10 | 185, Crate Hinges, Nos. 918 | 910 | 60&10 | 187, Crate Hinges, Nos. 918 | 920 | 924 | 60&10 | 187, Crate Hinges, Nos. 918 | 920 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 60&10 | 188, Patent T Hinges, Nos. 922 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | 924 | had been sold to arrive, but a quantity of been anticipated. ward changed hands at \$22 and \$22.50 Orders are now sent abroad for only small lots of 100 to 200 tons, and the number of such orders is very limited. Nominal quotations are as follows: Carnbroe, \$22 from ship and store; Coltness, \$22,50@\$23 to arrive and from ship : Shotts, \$22.50 @ \$23 from ship : Glengarnock, \$22 from ship and store; Gartsherrie, \$22.50 from yard; Langloan, \$23 from ship; Summerlee, \$22.50 to arrive and

be sold on arrival, to save storage, realized

Nos. 10 to 16. Lighter sizes are quoted in

for Steel are inducing many to experiment great as it was two weeks ago, but it seems | with it in the hope of finding a comparatively cheap substitute for the high-priced Irons of exceptionally good quality. Fine domestic 158, 159, Japanned Parliament Butts, Ball Tips, No. 55, 108. 55, 1 Steels are competing vigorously with im-son of dullness will soon set in, consequent 7¢; Bessemer and Open-hearth Machinery, as the closing up of the year's business, and shoe, 3¢; Boiler Plates, 5¼¢ @ 5¾¢, with

tion to pass through such a period without tual business follows slowly after persistent "shopping." Iron Rods are quoted at \$53.50 @ \$57.50, and Steel Rods at \$47 @ \$50.

Steel Rails.-Very large sales are re ported to have been made in the West in the past week, but particulars and prices are wanting, save the announcement that the Chicago companies are now asking \$37 at mill, and the Pennsylvania companies are firm at a minimum of \$35 at mill. derstood that the Pennsylvania Railroad Company have placed orders aggregating 50,000 to 75,000 tons with different mills along its line at the nominal rate of \$35. It is asserted that this is a conditional sale, expecting to get outside figures, except in figures. So many orders have now been secured for next year that the companies are of them, and there is a growing belief that Some companies ered next fall. Inquiries are still coming in from railroads in every section of the country, and it now seems very probable that the demand will be considerably larger than had

Old Material .- The demand for Wrought Scrap is exceedingly light, and the yards report very little business. We do not hear of more than 250 tons having been sold. Nominal quotations are \$23 @ \$24, the latter figure for best selected yard. We are reported a sale of 1000 tons of demestic Old Rails to go to Pittsburgh, on terms not disclosed. Negotiations are in progress for another and still larger lot. Quotations are, nominally, \$22 @ \$22.50 for T's, and \$24 for Double Heads.

TRANSACTIONS ON THE NEW YORK METAL EXCHANGE.

We are reported the following transactions on the floor of the Metal Exchange from Wednesday noon of last week to Wednesday noon of this week:

Wednesday, November 28.—Second Call. FRIDAY, November 30,

25 tons Straits Tin. Dec., B. O..... SATURDAY, December 1. Straits Tin, Feb..... " cash...

Monday, December 3. 100 tons American Pig, No. 1, Mar. 820.1216 Straits Tin, Mar . Tuesday, December 4. 50 tons Straits Tin, Nov.-Dec. Ship. Wednesday, December 5. 100 tons American Pig, No. 1, Apr. . . 10 Domestic Lead, Feb...

The above recorded sales aggregated 1000 tons of Pig Iron, at \$20.121/2 (@ \$20.50; 170 tons of Tin, at 18.85¢ @ 19.05¢, and 20 tons of Lead, at 356%.

On the 4th instant the Exchange adopted of the leading mills. It is estimated that an amendment to its by-laws, covering a plan of life insurance. According to this plan, the members are assessed \$10 each on the death of a member. If a death occurs within a year from the adoption of the bythis month. As the mills have small stocks law, 25 % of the amount collected will be and the stores are carrying but moderate paid to his representatives. In the second year 35 % will be paid; in the third year, 45 %, and so on, increasing to % yearly up to the ninth year, when the full amount will be paid. The sum retained will be used to establish a gratuity fund, limited to \$100,000, the interest on which, after that amount has been secured, will be applied to the reduction of assessments. The gratuity is limited to \$10,000. A number of regulations governing transfers of seats have been adopted which have a bearing on the insurance plan. The present membership numbers 352. Seats have recently sold at \$300

METALS.

Copper.—Copper, in common with the eneral Metal market, has been very quiet during the week. As it was, the Metal mar-ket was dull enough, but there is now superadded the apprehension that during this session of Congress there may again be some tariff tinkering, a feeling which intensifies the little disposition to operate beyond cur rent wants, which are small enough. O opens. There is a limited demand for Heavy Sheets, which we quote at 3\$\psi\$ (0) 3.3\$\psi\$ for Nos. 10 to 16. Lighter sizes are quoted in our New York Wholesale Price List.

London came yesterday, \$\pmi\$ 60 Chili Bars, and \$\pmi\$66 Best Selected, while to-day we receive the following cablegram: "Market a little weaker and prices lower. Best Selected, £65 @ £66, and Chili Bars, £59 @ Best £59. 10/." Manufactures may be quadras under: Bottoms, 24¢; Braziers, 24¢; Sheathing, 22¢, and Bolt Copper, 24¢.

Tin.—London has fluctuated a good deal since our last report, and we with it. Last night the cable quotation there for Straits Since then we have received blegram: "Market irregular. the ensuing cablegram : Straits Ingot, spot, £85. 15/ @ £86. 5/, and futures, £86. 10/ @ £87. 5/." Straits, large lots, may be quoted in this market, 19¢, and L. & F., 20½¢ (@ 21¢, nominally. There were shipped from the Straits settlements in November to this country 150 tons, and to England 1500 tons. Since January 1 there were shipped this way 6195 tons, against 4150 last year, and to England 3590 tons, No. 745.5 as the closing up of the year's business, and that possibly for 30 to 60 days the demand Joint No. 750.25.10 may be of smaller proportions, but sellers Narrow No. 752.506.10 how no real sizes in the possibly for 30 to 60 days the demand that possibly for 30 to 60 days the demand with the possibly for 30 to 60 days the demand that possibly for 30 to 60 days the demand with the possibly for 30 to 60 days the demand that possibly for 30 to 60 days the demand that possibly for 30 to 60 days the demand with the possibly for 30 to 60 days the demand that possibly for 30 to against 7030 last year, showing a total ex-

Hayti

aporto

Liberia

Venezu-la

Ptlm., gals. 403,832 40,94 Mach'y, pkgs. 29 2,64 Cutlery, cs... 151 4,83 Wire rope, cs. 8 20

Newfoundland.

Wheel & worm box...... 1 Ptlm., gals... 490 New Brunswick.

Pig iron, tons 100 1,600

Hong Kong.

British East Indias.

Ptlm., gals.482,080 44,000

Mexico.

Uruguay.

25 42 2

Revolvers, cse 1

Tin, pkgs.... Tacks, pkgs... Pumps, pkgs... Shot, bags.... Plumb, mat'l.,

pkgs..... Clocks, cs... Roof. ir., bdls.

90

481

450 8,447

Ptlm., gals.

Wire g'ds, cse

India agent, 13 Cedar street, New York vors us with the statistics below :	, fa-
November 1—Stock of Tin on this coast	Tons. 1,700 1,400
Less estimated consumption in November	3,100 1,000
December 1—Stock	2,100 600
December 1-Visible supply	2,700
Tin Plates.—Our market has remained quiet. We quote at the close, large I ordinary brands, \$\frac{1}{2}\$ box: Charcoal Branch \$\frac{1}{2}\$ box: Gasta \$\frac{1}{2}\$ \$\fra	ines,

\$5.62½ @ \$5.75; ditto Ternes, \$5.12½ @ \$5.25; Coke Tin, \$5 @ \$5.10, and ditto Ternes, \$4.75, nominally. Liverpool is firm at 16. Coke, and 18/@ 19. Charcoal. From London we are informed that there is no change. Net import into the United States during the first nine months, 167,607 tons, against last year, 164,590.

Lead .- Some 400 tons Common Domestic sold during the week at \$3.60, while Refined may nominally be quoted \$3.65. Lead is particularly affected by the fear of another speedy revision of the tariff, so that people are quite shy of it. St. Louis is down to are quite shy of it. St. Louis is down to are quite shy of it. St. Louis is down to \$3.45 with Soft; it is dull at these figures. From London we are cabled this day as follows: "Prices have advanced a little. Common English Pig, £12. 15/ @ £12. 10/." Manufactures are £12. 15/ @ £12. 10/." Manufactures are Cases, 12. Cases, 12. Field Alfred & Co. Cases, 83 quoted as follows: Lead Pipe, 6%%; Sheet Lead, 7%%; Tin-lined Lead Pipe, 15%% lb, and Block-Tin Pipe, 45%, less the usual discount to dealers.

Spelter and Zinc .--Spelter producers are also uneasy in view of the possibility of tariff modifications, and Common Domestic is dull modifications, and Common Domestic is dull and inactive at $4\frac{1}{2}3^{\circ}$. We quote Silesian, $5\frac{1}{2}6^{\circ}$, nominally; Bertha Reined, $7\frac{1}{2}6^{\circ}$ & 8° , and Bergenport, $9\frac{1}{2}6^{\circ}$. Sheet Zinc is quiet at $5\frac{1}{2}6^{\circ}$. From London we are told: "Market steadier. Prices unchanged at £13.7/6 @ £13.10/ for Ordinary at shipping port." Net import of Spelter into the United Shears, cks. King Alex. & Co Mach's States during the first nine months, 3237 tons, against 8349 last year. The export of Domestic Spelter has fallen from 1,121,539 Merchants' Disp. C Mach'y, cs., 21 Mansfield B. Cases, 6 Bale, 1 McCoy & Sanders, Cases, 5 Moore's Sons J. P. Guns, cs., 8 Moss F. W. Files, cks., 4 Anvils, 14 Hammers, cash 102,909; in other words, it has almost ceased altogether.

Antimony-Has advanced to 101/4 @ 101/2 # Hallett, and 111/2 Cookson.

COAL

The Anthracite Coal trade, it is commonly remarked among the wholesale dealers, is "in a bad way." Although several conferences have taken place, no agreement has been reached respecting restriction at the mines, and those favoring this measure do not hesitate to predict evil consequences as the result of delay. In a word, the mar-ket is dull and depressed under accumulated production, with prices in many instances only nominal, and there is no certain pros-pect of relief as matters stand. The trade was startled December 1 by a circular from the Pennsylvania Coal Company, giving reduced prices for fresh mined Pittston Coal at Weehawken, as follows:

Grate, p	er	ton	of	2240	pounds.	,								. 4	83.80
Egg.	61	6	6.6	2240										. '	8.85
Stove.	6.0	6	4.5	2240											4.25
Chestnut	1. 0	6	0.0	2240	6.0										4.25
Pea,	0	6	4.6	2240											2.80
200.0	-														

These figures, it was explained, are not, in fact, a reduction, although 30¢ lower than the prices realized one year ago; they simy conform to the actual prices current for ome time past. Mr. Hoyt's proposal is a full week's stoppage every other week. The Western demand continues good, and is more than ever a leading factor. The total amount of Anthracite mined thus far in the year 1883 is 28.418,805 tons, compared with 26,700,188 tons for the same period last year, an increase of 2,318,618 tons. The Bitu-minous trade is dull, at very low prices.

OLD METALS, PAPER STOCK, &c Purchasing prices offered by dealers are as

follows:	
Copper, heavy P D.	80.12 @
hight	.10 68
Copper Bottoms "	.10 @
Yellow Metal "	.0716 @
Brass, heavy	.09 @
** light "	.07 @
Composition, heavy	.11 @ .113
Lead. heavy "	.0334 @
Tea Lead "	.081, 60
Zinc **	.08 @
Pewter, No. 1	.14 @
" No. 9 "	.10 @
Wrought Iron	22.00 @
Light " "	11.50 @ 12.50
Stove Plate Iron "	11.00 @ 11.50
Machinery " "	14.50 @ 15.00
Grate Bars "	4.50 @
Stereotype Plates 2 16.	.0416 @ .0416.
Electrotype " "	.0414 60
Small Type	.05 @
The prices current (prices	
dealers) for Rags, &c., are as	
Canvas, Linen	. " 816 @ 6

No. 2 Seconds Soft Woolens. Mixed Rags. Jampy Bagging tote Butts. Jentucky Bagging yook Stock.

White, No. 1

FOREIGN TRADE MOVEMENTS.

Included in the imports for the week end ing November 30 were leading articles of

merchandise valued as follow	20 1	
	Pkges.	Value
Antimony	120	\$4,800
Anvis	1.7	2,264
Brass goods	54	4,724
Bismuth	12	1,174
Bronzes		5,967
Chains and anchors	- 18	0.80
Clocks	- FE	10,408
Copper		659
Cutlery	116	26,220
Guns.	90	14.7%
Hardware	10	1.512
Iron, pig, tons	4.312	60,403
Iron, sheet, tons	24	1,821
Iron tubes.	25/0	184
Iron, other, tons	1,235	46,207
Railroad bars	2.4	65
Machinery	150	14,059
Metal goods.	255.1	22.587
Needles	18	6,889
Nickel.	10	2,920
Old metal	40	2,144
		8,853
Piatina	6	1,899
Platedware		
Piumbago	8,554	50,199
Percussion caps		584
Pins.		2,560
Sulliery	26	8111

s.	Steel blooms Spelter Tin boxes. Tin, slabs, 9,922; lbs. Wire Zinc oxide		78,048 60,979 978,182 1.094	288 2,886 299,445 214,730 6,260 6,572
10	The imports of n pare with previous	netals a	nd hardw	
10 10 10 10 10 10 10	Cutlery, pkgs Hardware, pkgs Iron, R. R., bars. Lead, pigs Steel, pkgs Tin, bxs Tin slabs, fbs.	19	48 weeks of 1883. 6,802 1,078 14,429 12,124 2,557,128 2,017,570 28,348,989	time 1882. 6,674 1,134

IMPORTS

Of Hardware, Iron, Steel and Metals into the Port of New York, for the Week ending Dec. 5, 1883.

Spiegeleisen, kg., 310,849 Bars, 4167 Bundles, 557 Blooms, per 58 Hardware. Boker, Hermann & Co.
Hdw., cutlery and
guns, pkgs, 48
Brown Bros. & Co.
Case, 1
Curley J. & Bro.
Cutlery, cs., 8
Mdse, cs., 2
Codd Hiram & Co.
Mach'y, cs., 2 Bundles, 557 Blooms, pcs., 58 Ralls, tons, 296 Rods, pkgs, 5834 Rods, bdls, 10,367 Sheets, bdls., 678 Sheets, pkgs., 7 Old rods, pcs., 3734 Serap, tons, 52 Wire rods, colfs, 9652 Rivet wire rods, colfs, 4518 Cases, 83 Casks, 21 Mdse., cs., 7 Chain, &c., pkgs., 8 Fuchs & Lang, Machines Gordon Otto, Bundles, Hildick A. H. Anvils, 30 Shears, cl

Tubes, 62 Old heavy scrap, tons, 125 Steel. Abbott Jere. & Co. Cases, 45 nes, pkgs., 18 Cases, 4 Cases, 45
Bars, 2 Pkgs., 4
Mdse., pkgs., 4
Baring Bros. & Co.
Bess, fence wire,
colls, 5469
Belcher H. W. & Co.
Blooms, 245
Packages, 63
Brown Wm.
Packages, 154
Cortis R. J.
Pkgs. and pos., 68
Downing, Sheldon & Co.
Wire, pkgs., 2
Fabre A. King Alex. & Co. Mach'y, pkgs., 8 Loewl Edward, Case, 1 Leaycraft & Co. Guns, cs., 12 Merchants' Disp. Co. Mach'y, cs., 21 Mansfield R

Wire, pkgs., 2
Fabre A.
Case, 1
Messner, Ackermann &
Co.
Wire, rolls, 1452
Moss F. W. Wire, Folis, 1452
Moss F. W.
Bundles, 166
Bars, 9
Case, 1
Plock & Co.
Tires, 88
Temple & Lockwood,
Cases, 3
Bars, 2
Bundles, 9
Wagner, W. F.
Bundles, 132
Bars, 25
Cases, 7
Casks, 2
Wire, case, 1
Order, as 1304 senthal J. & Co. Cases, 16 Schoverling, Abbott & Casks, 2 Wire, case, 1 Order, Rods, flat, 1294 Bands, 325 Bars, 24 Cases, 29 Bundles, 6 Forgings, 4 Cases, 44 Strips, cks., 44 Spring, tons, 973 Old steel, tons, 25 Tires, 24 Flange rails, 1530 Fish plates, bdls., 40

Bond, Parsons & Co.

Tillotson L. G. & Co.
Packages, 6
Galv. wire, pkgs., 197
Taylor Thos., 8
Madse., cs., 8
Ward Alsine,
Mdse., cs., 5
Cutlery, cs., 6
Wiebusch, Hilger & Co.
Hdw. and cutlery,
nkcs., 9 pkgs., 9 Williams & Guion, Mach'y, cs., 13 Witte John G. & Bro. Cutlery, cs., 8 Cutlery, cks., 1 Cuttery, Nails, bbls., 3 Files, cs., 8 Bolts and nuts, cs., 8 Cutlery, cs., 1 Soda-water mach'y,

Gales, Mdse., cs., 7 lotson L. G. & Co.

Iron. Alexandre F. & Co.
Rails, 585
Rish plates, bdls., 120
Coddington T. B. & Co.
Sheets, bdls., 835
Sheets, bxs., 53
Crocker Bros.
Spiegel, tons, 25934
Spiegel, cks., 30
Pig, tons, 2
Lee James & Co. Pig, tons, 2 Lee James & Co. Pig, tons, 300 Lyles & Gibson, Bars, 566 Marquand H. & Co. Cylinders, cs., 3 ontgomery & Co. Wire, cks., 7 Wire, cs., 2 son J. W. & Co.

Bond, Parsons & Co.
Tin plates, bxs., 685
Coddington T. B. & Co.
Tin plates, bxs., 129
Coxheath Mining Co.
Copper ore, cks., 92
Copper ore, cks., 92
Copper ore, bdfs., 81
Constanseau L. & Co.
Old metal, cs., 2
Cortis R. J.
Tin plates, bxs., 55
Dickerson, Van Dusen & Co.
Tin plts., bxs., 4053
Black taggers, 250
Antimony, cks., 34
Drexel, Morgan & Co.
Lead, pigs, 789
Field Alfred & Co.
Gun caps, cs., 10
Erie Disp. Co.
Tin plates, bxs., 230
Lamarche, H.
Zinc, cs., 43
Meyer G. A. & E.
Zinc oxide, cks., 200
Moore's Sons J. P.
Gun caps, cs., 5
Phelps, Dodge & Co.
Tin plates, bxs., 3000
St. Louis Stamping Co.
Tin plates, bxs., 371
Order,
Tin plates, bxs., 4448 lire rope, coils lants' Disp. Co Merc Moore's Sons J. P.
Guns, cs., 4
Perkins & Choate,
Spiegel, tons, 998
Ferro-manganese,
tons, 250
Prosser Thos. & Sons,
Tubes, bdls., 34
Plock & Co.
Wire rods, pkgs., 741
Stetson G. W.
Pig, tons, 400
Williamson Jas. & Co. Order, Tin plates, bxs., 4448 Tin slabs, 932 Tinned sheets, cs., 14 Spelter, ingots, 2499 Spelter, ingots, 2499 Order, Pig. tons, 2008 Spiegeleisen, tons, 86

EXPORTS

Of Hardware, Iron, Machinery, Metale, &c., from the Port of New York, for the

è	week ending Decem	ber 4, 1883.
40	Dutch West Indies.	Quan. Va
3	Quan. Val.	Mf. iron, pkgs 31 83
d	Ptlm., gals 271 831	Mach'y, pkgs. 8 5
ø	Durch East Indies.	Zinc dross,cks 14 2
40	Ptlm., gals. 675,680 67,600	London.
60	Amsterdam.	Mf. iron, pkgs 3
3		Ptlm., gals, 364, 195 33, 2
è	Pumps. pkgs. 17 984 Hdw., pkgs 22 1,086	Clocks, es 101 2,9
	Clocks, case 1 48	Cork.
	Mach'y, pkgs. 7 1,300	Ptlm., gals.266,510 17,2
	Copenhagen.	Hull.
-	Mach'y, pkgs. 32 1,235	Hdw., pkgs 33 8
f	blf. iron, pkgs 15 487	Clocks, cs 78 1,5
-	Hdw., cs 7 187	Ag. imp., pkgs 4
	Clocks, pkgs 2 66	St'p'dware, cse 1 : Mach'y pkgs . 4 1:
6	Christiania.	Tarragona,
4	Hdw., pkgs 18 852	And the second s
1	Mf. iron, pkgs 9 213	Ptlm., gals, 153,325 18,56
į.	Wring'rs, pgs. 3 75	Glasgow.
ĩ	Hamburg.	Sew. mchs.,cs. '16 1,0
5	Sew. mchs, cs. 1989 34, 144	Mach'y, pkge. 1
ä	Knit. mach, es. 12 1.320	Ag. imp., pkgs 205 1,40
0	Hdw., pkgs 35 1,385	St p dware, cs. 4 10 Hdw. pkgs 53 1.20
0	Mf. iron, pkge 1 60	Mf. iron, pkgs 3 47
9	Mach'y, pkgs. 2 300	Rot erdam.
8	Bremen.	
1	Ptlm., gals. 750,000 55,440	Ptim. gals. 220,000 19,80
Į.	Mf. iron, pkgs 6 g65	Antwerp.
	Ptg. press., cs. 22 760 Hdw., case 1 50	Hdw., cs 15 1,00
-	Witness 11 Charles City	British West Indies
7	Mach'y, pkgs. 10 2,000	Petim., gals 36,320 4,20
1		Nails, kegs 87 25
)	Liverpool.	Mf. iron, pgs., 10 . 6
1	Ptlm., gals, 481,625 41,700	Harpoons, ese 1 8
	Hdw., pk.s 46 911	Revolvers, cs. 2 16
	Charles rikers 988 8 898	Tormadoos hve 50 TI

Val. \$206 150 Clocks, cs. . . . Bells, cs. Mach'y, pkgs. Cartridges, cs. 454 62 Ag. imp., pkge Hdw., pkgs... British Honduras.
 Nails, kegs...
 25
 71

 Hoop iron, bdls
 14
 45

 Hdw., pkgs...
 79
 857

 Ptlm. gals....4624
 562
 Hoopiron.bdls 14
How, pkgs. 79
Ptlm. gals...484
Soy
Ptlm. gals...484
Soy
Ptlm., gals...255
Shoe imp. cse
Hdw., pkgs...18
British Possessions
Mt. iron, pkgs. 2

Revolvers, cae 1
Ptim., gals...8100
Clocks, case... 20
Ulctry, case... Brass ket, cks
859
British Australia Hdw., pkgs... 33 Sew. ma., cs... 22 Ptlm., gals... 2000 Needles, pkge. 1 Stmpdwre, cs. 34 Japan. Ptlm. gals..65,462 8,896 Clocks, cs..... 5 85 Mach'y, pkge. Brazil. French West Indies. Sew. ma.,case 1 80

Ptlm., gals.216,460 21,646 Havre. Mach'y, pkgs. 29 4,307 Sew. mchs, cs. 71 1,855 Ag. imp., pkgs 70 900 Copper, pkgs. 229 19,627 Wire, cs. 14 2,690 Met goods, cse 1 790 Scoles ace 1 790 wheels and a., pairs. ... 34
Fire engines. ... 20
Sew. ma., cs. ... 20
Buckles. 1
Cartridges, cs. ... 3
Iron safes. 2
Ag. imp., pkgs ... 5
Mf. iron,pkgs ... 17
Nails, pkgs. ... 14 Bordeaux. Argentine Republic. Argentine Republic.
Pumps, pkgs. 9 390
Cutlery, cs.... 21 1,088
Ag, imp., pkgs 177 5,206
Mf, iron, pkgs 16 1,615
Iron safe...... 1 500
Mach'y, pkgs. 3 575
Tacks, cs.... 10 329
Hdw., pkgs... 58 169
Fulm., gals... 28,000 9,320
Sew.ma., cs... 63 1,100

Copper, cks. . . 180 33,750 Sew. ma., cs. . 8 138 Marselllen. Ptlm., gals. 168,812 11,416 Cette. Ptlm., gals.227,785 18,219 Dunkirk. Ptlm., gais. 199,820 16,015

Cuba. Mf. iron, pkgs 269 Shoe nails,bxs 36 Nails, kegs... 104 Spikes, kegs... 140 Mf. iron, pkgs 399 4,537
Shoe nails, bxa 39 13a)
Nails, kegs 104 289
Spikes, kegs 140 457
Pilm, gals 1000 280
Sew. ma., cs. 15 6624
Tubes 300 306.
Met. gds, cs. 2 300
Mach y, pkgs 100 13,311
Hdw., pkgs 100 13,311
Hdw., pkgs 113 2,313
Clocks, cs. 15 337
Saws, cs. 8 673
Scales 2 659
Cuttery, cs. 11 634
Nails, pkgs 7 121
Scales, cs. 12 395
Pumps, pkge 1 20

Unina.

Petlm.,gals.463,160 42,263 Chitt. Scales, cs. . . . 188
Ac. imp., pkgs 176
Hdw., pkgs . . 75
Arms, case . . . 1
Sew. ma., cs. . 96 2,475 2,178 2,085 3,085 50 1,751 84 258 550 98 5,250 5,000 625 197 201 665 71 250 170 210 ach'y, pkgs. mps, pkgs. evolvers, cse

Cutlery, os... 88 1,654 Tacks, case... 1 20 Tacks, case... 1 200
Ag. imp., pgs. 366 7,610
Sew. mch., cs. 2 24
Ptlm., gals...13,000 1,650
Hdw., pkgs... 46 538
Clocks, cs.... 53 696 San Domingo. Cutlery, cs.... 8 75 Hdw., pkgs... 8 63 Mach'y, pkgs. 211 1,481 Sandwich Islands. Hdw., pkgs... 13 Mach'y, pkgs. 9 Whaling lances, 650 800 case 1 92 St'm p'mps, cs 4 2,740 Central America.

United States of Colombia. Ptlm., gals... 1016 Mach'v, pkgs. 139 Revolvers, cs... 6 Firearms, cse... 1 Brass tubes, cs. 25 Nails, kegs... 25 Pumps, pkgs... 2 Saws, cs... 4 44- Firearms, cse. 1
74 Brass tubes, cs. 25
329 Nails, kegs. 25
72 Pumps, pkgs. 2
979 Saws, cs. 4
160, pkgs. 15
90 M, iron, pkgs 32
213 Sew. ma., cs. 119
15 Cutlery, cs. 66
416 Cartridges, cs. 14
4 Clocks, cs. 6
34 W. wheel 1 Cutlery pks. 8
Pistols, case. 1
Nails, kegs. 23
Mf. iron, pkgs 22
Sew. ma., cs. 18
Arms, cs. 2
Pulm., gals. 1839
Clocks, case. 1
Hdw. nkcs. 46 Hdw., pkgs... Cartridges,cs. Shot, bags.

PHILADELPHIA.

Office of The Iron Age, 220 South Fourth St., } PHILADELPHIA, December 4, 1883.

Pig Iron.-Business has not been very active during the past week, owing to the holiday feeling which has prevailed for some days. There is, in fact, a disposition among buyers to postpone new engagements, trust-ing to the possibility of developments in their favor at a later date. The market for Fin ished Iron is more than usually irregular and uncertain, and the outlook anything but encouraging; hence the unwillingness of con-sumers to make contracts for Pig Iron. On the other hand, holders are very firm, and there is an impression that current quota-tions can be maintained, but no one appears to anticipate any upward movement; hence the indifference of both buyers and sellers. Sales and deliveries during the past month were somewhat in excess of the output, so that, for the time being, producers are ir bet-ter condition than they were five or six weeks ago The demand is still fairly active, particularly for low-priced Iron, but there is not that varied demand which betokens general activity. Still, if stocks can be kept within moderate compass, prices will be maintained, and that, after all, is the chief consideration. been such as to confirm the remark then asking price.
made. Low-priced Irons, for instance, can
Old Pails be readily placed in large lots, while others are comparatively dull and neglected. Prices are, therefore, considerably more uniform than they were some time ago; and, notwithstanding the dullness, the market shows a good deal of strength. Foundry Irons have been sold at prices varying from \$20 to \$22 for No. 1, and from \$19 to \$20

consumers are forced into the market again. supplies in their hands being unusually light. Mill Irons are held with more firmness than was expected, and as stocks on furnace banks are quite light (with two or three exceptions), prices are not likely to give way for the present, if at all. The asking rates for Gray Forge are usually from \$17.50 to \$18 for standard brands, although concessions of 25¢ @ 50¢ P ton are frequently made when the buyer is strictly first A very large amount of good Iron has been secured at \$18, delivered, sales in lots of 1000 to 2000 tons each having been made on that basis within the past week with demand slightly in excess of the supply. One or two choice brands of Gray Iron still command \$19 at furnace, and are firmly

Foreign Iron.—Bessemer appears to be totally neglected, although intimations have been made that at \$19.75 (@ \$20, lots of 5000 to 10,000 tons might be taken. Firm offers cannot be had, however, so that prices are entirely nominal at \$20.50 asked. Speigeleisen is very dull, with free sellers of 20 % at about \$29, but there is no disposition to make offers even at \$1 less money.

Muck Bars .- Demand light and prices somewhat irregular, asking rates varying from \$32 to \$33, at mill; small sales at both

Blooms.-There is very little business doing and prices are hard to quote with any degree of accuracy. Sellers quote as follows: Charcoal Blooms, \$55 @ \$57; Run-out Anthracite, \$47.50; Scrap Blooms, \$42 @ \$43; thracite, \$47.50; Scrap Blooms, \$42 @ Northern Ore Blooms, \$39.50 @ \$41.50.

Bar Iron. -Business seems to grow duller every week, and, while prices are nominally unchanged, the weakness is more pronounced than it has been at any time within the past four years. This is largely due to the extremely low prices at which Bars have been offered by manufacturers from a distance, and, while actual sales have been of no special importance, the effect has been very demoralizing to the local trade. In some cases 1.9¢ delivered has been quoted for what are called Best Refined Bars, but the conditions of sale were such that buyers preferred placing their orders nearer home, although very unwilling to pay 2.1¢, the card rate. The consequence is that business has been cut down to the lowest limit pos sible, and for the present, at any rate, there is very little prospect of improvement. There is some inquiry for Skelp Iron, but buyers appear to expect to place orders at about 2¢, which sellers are hardly prepared to accept, unless reduction in cost can be made in some way. Orders for nearly 1000 tons of Skelp Iron have just been placed, and inquiries are likely to be out within a few days for large lots of Car Iron. One firm has secured an order for 1700 cars, and others have received orders which, in the aggregate, will be of considerable importance to the Bar mills.

Roof. ir., bdls. 42 431
Stearu pumps. 2 475
Ptlm., gals. 35,000 3,849
Ag, imp., pgs. 87 2,385
Tinfoli, cs. 4 140
Nails, kegs. 353 1,085
Mach'r., pkgs. 143 12,141
Boiler tubes. 76 2,617
Mf, iron, pkgs 309 2,418
Armá, cs. 3 387
Sew. ma., cs. 151 3,084
Armá, cs. 3 387
Sew. ma., cs. 151 3,084
Saws, cs. 3 172
Cartridzes, cs. 10 222
Cartridzes, cs. 10 225
Spikes, pkgs. 229 864
Loco, boil's,pg 13 2,326
Chains, bbls. 2 65 Plate and Tank Iron.-The market remains in a dull and depressed condition, new business coming in slowly and at gradually declining prices. For the present, however, many of the mills have orders sufficient to carry them pretty well into next month, and, as there will doubtless be the usual demand for small lots, there is no immediate probability of any general suspension of work beyond what is customary at this season of the year. Prices are somewhat irregular, but in ordinary transactions are quoted as follows: Boat Plate, 2.3¢ @ 2.35¢ Tank Iron, 2.35¢ @ 2.4¢; Shell, 2.85¢ @ 35¢ Flange, 3.85¢ @ 4¢; Fire-Box, about 5¢.

The Central Iron Works, at Harrisburg

request us to contradict the statement which has been widely circulated that their plate mill had been closed for an indefinite period on account of searcity of orders. There is not the slightest foundation of truth in such a statement, as the mill is amply supplied with orders, and is running, as usual, up to its full capacity.

Structural Iron.—Business is quite and very few new orders are coming in at present. There has been some inquiry, in one case for about 1000 tons, but actual sales ent. 2730 have been within the usual limits of a retain 900 trade. Prices are rather easier and somewhat nominal at about 2.25¢ @ 2.35¢ for 111 (@ 2.5¢ for Double Refined Bar Iron; 2.75¢ for Tees, and 3.5¢ for Beams and Channels.

Sheet Iron.-The market is very lar, due largely to the anxiety of Western manufacturers to unload their surplus on Eastern buyers. For the best Sheet Iron prices are fairly well maintained, but there is a considerable amount of inferior stock, mos., and 1000 tons Bessemer at \$20.50, cash. which can be had much below ordinary mar

		which															
Com	mon S	heets,	No	. 28.													4
Con	mon S	heets,	No	8, 26	an	d 2	7.										4
Com	mon 8	heets,	No	8. 21	to	25											3
Com	mon 8	heets,	No	8. 18	to	50								. ,			3
	Best	Refine	M.	181	adv	an	ce	6	111	t	h	e	a	U)(25	10.	
Best	Bloon	Shee	18, 1	108.	26	to:	201							A .		5.5	6
Hest	Bloon	Sheet	18, 1	NO8.	22	to:	25,										6
Best	Bloom	Shee	18, 1	vos.	16	00	21.										6
Com	mon B	ted Pla	Hes.	9-10	E	10											2.
Blue	Anne	aled				0.0		1									2.
pest	BIOOH	, Galv	BIN	zed,	CIR	160	UL	ľ		, ,					٠		4
seco	nd qua	ility, d	isco	unt											0		- 0
Jonn	mon													0.0			- 6

Steel Rails.-There is no special change of feature to notice this week, the market being dull and uninteresting. Sellers are unusually reticent in regard to their transaction, but there is reason to believe that an Eastern mill has recently sold several thou-sand tons at a figure slightly less than \$35 at There is no doubt that large orders will have to be given out before long, but, in the close of the year. the meantime, buyers hold off, and, while they ask for quotations, it is difficult to get and that, after all, is the chief consideration. them to make firm offers. Small lots for This feature was referred to in our last report, and transactions since then have mill, but to large buyers \$35 is the usual

> Old Rails.-The market is quite bare of stock, and spot lots would command good prices. Sales of Old T's have been made at \$23.25, and same price bid for several hundred tons more for early delivery. A fair quotation would be \$23.25 @ \$23.50, Philadelphia, or its equivalent.

in Boiler Tubes. Quotations remain as last noted, viz: 70 and 10% off on Gas and Steam Pipes and 62½% off on Boiler Tubes.

Nails.-The demand is well sustained fo the season, but prices are gradually drooping, and \$2.65 @ \$2.75 P keg, according to quantity, appears to be all the market will afford. In some special cases lower prices have been named, but the average price is as above stated.

PITTSBURGH.

(Special Dispatch to The Iron Age.)

PITTSBURGH, PA., December 5, 1883. At a very fully attended meeting of the Western Nail Association held in this city to-day, the subject of the stoppage of the Nail machines, December 22, was fully discussed and endeavors made to secure con-

sent of one or two parties to the same. The probability of the Eastern Association joining in the stoppage was also discussed, and there seeming to be no probability of this, and having failed to secure unanimous consent of the mills of the West, the resolution of November 14, providing for a six weeks' stoppage from December 22, failed; consequently there will be no stoppage.

Office of The Iron Age, 77 Fourth Avenue, е Ріттявикан, Ра., Dec. 4, 1883.

There has been no material change in the There has been no material change in the general Iron situation since the report of a week ago. That business is dull and unsatisfactory is generally admitted. But few, if any, of the mills are working up to anything like their full capacity. Some have stopped, and no substantial improvement is looked for until next month However, it is well ear in mind that there is nearly always a lull in the Iron business at this season of the year, and, notwithstanding the gloomy forebodings entertained by some with whom it is chronic to complain, there is no good reason apparent why there should not be at least an average trade the coming year. The great trouble in the Iron trade for some years past has been that the production has been increased more rapidly than the wants of the country demanded, and as a result of overproduction competition has been active, and prices have been cut to such an extent that it has been difficult with many manufacturers to get a new dollar for an old one. Pig Iron.-There is still considerable

Iron being bought and sold, but the demand as a rule is confined to supplying immediate wants. The sales reported during the past week aggregated some 4000 tons, and the prices quoted are the same as have been ruling for some time past—\$18, 4 mos., for good brands of Neutral Mill. Our home furnesses with a solitary execution, are stiff. furnaces with a solitary exception, are stiff at the price quoted, and they are supply-ing the great proportion of the Iron being consumed. Our home furnacemen that there is, under the most favorable circumstances, only a small margin for profit at the price in question, and that rather than submit to a reduction they will blow out. Moreover, the same quality of Iron cannot be laid down here from other points at the rate in question, and our home furnaces have the advantage in consequence. Again, consumers give the home-made article the preference over Irons made at a dis-tance, about which they know little or nothing. Also, a number of our mill owners are interested in these home furnaces, and they will naturally give the product of the furnaces in question the preference. Hence it is not strange, in view of what has been stated, that outside furnaces are almost shut out of this market. The view of cost of production is lower here than else-where, and the cost of transportation is avoided, which of itself is a fair profit; and then most of the home-made Iron is sold direct, and commissions saved. The consumption has fallen off considerably of late, but so has the production, and there is little or no accumulation of stock. The furnaces in blast have contracts that absorb their production, and this will continue to be the case until the close of the year. Quotations

may be fairly g	1V	01)	1	a	8	1	collows :			
No. 1 Foundry							\$20.00 @	\$21.00,	4	mos
No. 2 "							19.00 @	20.00,	4	6.0
Neutral Mill							17.00 @	18.00,	4	
All-Ore Mill							18.50 @	19,50,	4	4.6
Silvery Iron							18.00 @	18.50,	4	6.0
White and Mottle	d						16.00 @	16.50,	4	6.0
Researner Iron								91.50	Ä	5.6

mos., and 1000 tons Bessemer at \$20.50, cash,

Muck Bar-Continues very dull; efforts have been made during the week to sell, but without success; there is no demand for it. We continue to quote, nominally, at \$32, cash. It is offered at the price quoted, and might be bought for less.

Manufactured Iron.-Orders continue to come forward very sparingly, although this is usually the case at this season of the year. It is not to be expected that buyers will order beyond their immediate wants as long as the market is on the downward grade, as has been the case for some time past. Manufacturers generally continue to quote on a basis of 1 8¢ @ 1.85¢ for asorted orders, but it is said that some very desirable orders have been taken as low as 1.7¢, and even 1.65¢. None of the mills are runnin, full; some few are idle, and the number is likely to be increased before

Nails.-The demand has fallen off somewhat, but there is still some inquiry, and makers say that by shading prices they could get considerable business. The probability is that business will be light until February, when the spring trade usually opens up, the outlook for which is encouraging, as stocks are light, unusually so, both in first and second hands. Prices may be quoted at \$2 45 @ \$2.40 for carloads and upward, 60 days, 2 % off for cash.

Wrought-Iron Pipe.-There has be Wrought Iron Pipe.—The demand is the past week. Business continues dull, and Wrought 1701 1719.—The demand is the past week. Business continues duit, and for No. 2, both at tide. The demand for these grades is not active, but stocks are only moderate, so that there is a fair probability that prices can be maintained until



STAR HACK SAW PRICE LIST.

PRICE OF BLADES.

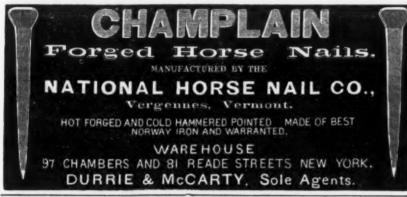
70 cents.

PRICE OF STEEL FRAMES PER DOZEN.

These frames are all made of steel, and, as seen in the cut, are all adjustable so as to face the blade in four different directions. The extension frames will hold the four different lengths of blades. The solid frames only hold the 8-inch blades, this being the length most in use; they all have the patent staple-shaped pins to hold the blades in the frame, which are so arranged that they cannot fall out. We say that the Stor Hack Saw is 100 per cent. better than any other kind in use. If, on a fair trial, it is found that or e dozen of our Saws will not cut as much as two dozen of any other kind, we hereby authorize all dealers to return what they may have in stock, at our expense. Now, if our competitors have the same faith in their saws, let them make the same offer, so that Dealers may unload what they don't want, and sell only the best, whichever one it proves

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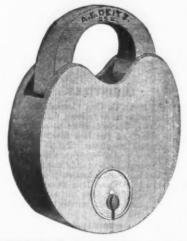
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ALL KINDS OF RIVETS. CLARK & COWLES

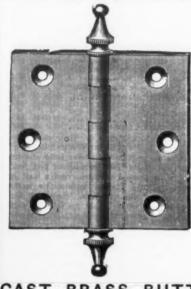
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> 1883. PENNSYLVANIA

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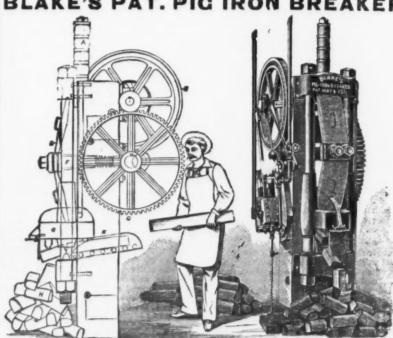
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% on Gas market tinue to quote discounts 73 @ 75 % of and Steam, and 60 % on Boiler Tubes.

Old Rails.—There have been no sales reported for a couple of weeks, and while the market is dull and prices are weaker, they remain about as last quoted. Consumers are bearish and are making efforts to force a decline, but holders do not appear disposed to make any concessions, and this accounts for first-class brands.

and unsettled, with but little prospect of any immediate improvement either in demand or Manufacturers are anxious to keep their works in operation, and for the time buyers have the advantage. Some well in-formed operators are inclined to the belief that present prices will look low within the next six months. For delivery this month \$36, cash, at mill, is still quoted, and for delivery in first half of 1884, \$35. So far as we can learn, there have been no sales made here below \$35

Railway Track Supplies.—The demand continues light and prices are weak; buyers have the advantage. Prices remain about as last quoted. Spikes, 2.5¢ @ 2.6¢, 30 days; Splice Bars. 1.8¢ @ 1.9¢; Track Bolts, 2.9¢ @ 3¢ with square and 3.1¢ @ 2.2¢ with beyagon puts 3.2¢ with hexagon nuts.

Steel .- The Merchant Steel trade tinues unsatisfactory; orders light; but few of the mills working up to anything like their full capacity, and prices are weak, especially as regards the poorer grades, which are being cut a good deal. Standard brands Refined Cast Steel, 11¢ @ 12¢; do. Crucible Machinery, 6½¢ @ 7¢; do. Open-hearth and Bessemer, 4½¢ @ 5¢; Steel Boiler Plate, 6¢ @ 6¼¢.

Crop Ends.—No sales reported for several weeks, and there appears to be no demand for them; in the absence of sales we repeat former quotations: \$23.50 for American and \$25 for Foreign.

Scrap.—The Scrap trade continues very dull, hardly enough doing to establish prices. No. 1 Wrought Scrap is quoted at \$20 @ \$21. Pret ton. and Selected do. at \$22 @ \$22.50; Wrought Turnings, \$16 @ \$18; Old Car Axles, \$30 @ \$32; Cast Borings, \$13 @ \$14, gross; Old Car Wheels offered at \$19, 4 mos., with no buyers.

Coke.-There has been no change in the situation during the week; business continues light; prices remain unchanged. Blast furnace, \$1 \$\mathbb{P}\$ ton, free on cars at ovens.

Window Glass .- The strike continues and there is no prospect of its being brought to a speedy close; manufacturers are still selling Eastern and Foreign Glass.

CHICAGO.

Office of The Iron Age, 36 and 38 Clark St., (Cor. Lake St., Chicago, Dec. 3, 1883.

Hardware.-The market for Hardware has no features of importance, trade being about in the same position as two weeks ago. The volume of goods sold during the past week was something below the first half of the month, which may in part be traced to Thanksgiving Day, and in part to the fact that the month usually closes with a little falling off in demand. The business for the antire month is reported estigatory, though entire month is reported satisfactory, though not as heavy as for that of October. The de mand for Cutlery is on the improvement as the holiday season approaches, while some other classes suffer a corresponding decline. Barb Wire is being bought more freely of late than for several months; consumers believing that the price is bottom, with a fair chance of advancing, are laying up a stock for future use. We can learn of no change in prices, but are credibly informed that on many lines there are evidences of weakness.

Nails.-The demand for Nails is reported steady, but in small lots only. Inquiries are being made for carload lots and in large quantities, apparently for the purpose of feeling the strength of the market for pres ent and future delivery. It is the general opinion that Nails are within a very narrow margin of the lowest figures likely to attain and with a view of proving this fact the bear" element are trying the prospect for lower prices for delivery previous to the time appointed for stopping the mills. Car-\$2.60. and small at \$2.65 @ \$2.70, with the usual discount for cash. Stocks, both in jobbers' and con-sumers' hands, are light, and the latter are becoming more animated over a probable scarcity and higher prices than pre-

American Pig Iron.-The activity of several weeks ago has gradually given place to quietness and indifference. Both pro-Both producers and consumers appear pretty well satisfied that Pig Iron has reached a solid foundation, and neither party are over anxious to press business. With the curtail-ing in production by "blowing out" and cessation of navigation, there is not much danger of accumulation on one side, and the depression of all kinds of manufacturing interests, especially in the Iron branches, on the other, there is no likelihood of a change occurring which will alter the present condition of the market, either in price or quantity, before the holidays. Consumers, Consumers, viewing the market thus, are ordering only what present requirement compels, and trusting to circumstances for the future. The for the month of November was above the average for the year, and the first days of this month vary but little from the days of this month vary but little from the past. We quote as follows for carload lots, 4 mos.: Lake Superior Charcoal, Nos. 1, 2 and 3 at \$22.50 @ \$23; Nos. 4, 5 and 6 at \$24; Lake Superior Coke at \$21 @ \$22; Lake Superior and Ohio, mixed, at \$21; Ohio Standard Black Band, No. 1, \$23 @ \$24; Southern, No. 1, at \$20.50, and No. 2 at \$19.50; Silvery Soft at \$19.50 @ \$21; Anthracite, No. 1, at \$22, and No. 2 at \$21.

Scotch Pig.-Navigation having closed, foreign from is held more firmly than hereto-fore, with indications of higher prices being a ked for some of the stock on hand before a a ked for some of the stock on hand before a great while. Glengarnock is quoted at \$28 to days, 2% off for cash; job lots, 10¢ (a and Summerlee at \$28.50. These two brands 15¢ higher.

at the prices the profit was small. We con- cover about all the imported Iron now in the

Merchant Steel .- The Steel interests are largely at variance on quality and price. What suits one class of manufacturers does not suit another, yet both parties purchase what is called "Best Refined" at a difference of about 2 % @ $2 \frac{1}{2} \%$ B, according to the amount of "sale" ability of the for the dullness of the past few weeks. Steel is just what a man wants to pay to the confers have been made to buy large blocks there being such a variety of brands and grades to be had that he can be accommograded to be accommodated at any figure. Considering that the ower and cheaper grades are not a standard Steel Rails.—The market continues dull test, our quotations apply only to recognized and unsettled, with but little prospect of any and established brands, which are firmly sustained. The demand for this class is sustained. The demand for this class is fairly good, and makers report business enough to keep them going. Prices for the best Refined grades are as follows: Refined Cast Steel, 10½¢ @ 11½¢ P B; Crucible Machinery, 6½¢ @ 7¢; Bessemer and Open-hearth do., 4½¢ @ 5¢; Steel Boiler Plate 6¢ @ 6½¢ Plate, 6¢ @ 61/4.

Steel Rails.—The position of the Steel Rail market is pretty much the same as two weeks ago. We have not learned of any weeks ago. We have not learned or any orders having been placed beyond the daily requirements, in small lots, which are accepted at \$37 \$\mathbb{H}\$ ton, and run from 500 to 2500 tons each. Negotiations are in progress, however, for large orders, but up to present writing nothing has been definitely settled. There are various rumors afloat in regard to Western mills having accepted heavy contracts at \$35, which are laid at the doors of Chicago mills, but from reliable sources we are informed that no such contracts have been made, nor are the mills desirous of making them at \$35 if not forced to by Eastern makers. There is a prevalent belief that better prices can be had later on, and mills are holding at option all orders that are not imperative for further developments.

Old Rails,—Old Rails are reported in moderate supply, with no urgent demand, at \$20 @ \$21 f.o.b. Chicago or Milwaukee de-

Bar Iron.-The demand for Bar Iron holds on very well for the season. The Iron sold is all in a small way, and for immediate use. Refined Iron is quoted at \$2 @ \$2.10 for the best quality, with concessions for desirable orders. There is Iron in the market for less money, but of questionable strength, upon which cutting of prices is no exception.

Norway Bars.—Norway Iron is in fair demand and held firm at 4¢ rates.

Builders' Iron.-This class of Iron is ubject to the season, and the demand has fallen off in proportion to the advancement of outdoor labor. In the absence of any definite transaction, we continue to quote as follows: Tank, 2.7¢; Angles, 2.9¢; Beams, 3.6¢, and Channels, 3.6¢ @ 3.8¢.

Galvanized Iron.-There is nothing of importance in this branch. Consumption has fallen off considerably, but prices re-Consumption main as follows: Juniata at 45 and 5 % off, and Refined at 45 and 10 % off.

Black Sheets.-The demand seems to be owing rather flat and the condition of the market more satisfactory every day. Com-petition seems to be the basis of complaint and the demoralization of prices. We continue former quotations: No. 24 at \$3.50, tinue former quotations: Nos. 25 and 26 at \$3.65, and No. 27 at \$3.80.

Scrap Iron.—Furnacemen quote \$18.50 @ \$19 for No. 1 Mill Scrap, with a fair supply to be had. The following prices are quoted as dealers' purchasing prices: No. 1 Wrought Scrap, P net ton, \$17; Cast Scrap, P ton, \$15; No. 1 Stove Plate Scrap, P ton, \$9; Wrought Turnings, P ton, \$5; Cast-Iron Borings, \$6; Old Plows and Plow Steel, \$9; Malleable Scrap, \$5.

EVERETT & POST, 156 Lake street, Chicago, report to us as follows, under date of December 1, 1883: Pig Lead.—The course of this market during the week has been down-Prices have ranged at \$3.45 @ \$3.40, and to-day \$3.35. The large consumers begin to realize that present prices are low, and are taking Lead quite freely.

CHATTANOOGA.

Office of The Iron Age, Market and Eighth Sts., (CHATTANOOGA, Dec. 3, 1883.

The weather during the week has been of the summer variety, with cool nights. This has an unfavorable effect on some lines of and encourages building operations which are being prosecuted with great vigor all over this section. There will be more new structures begun and finished during this winter than there were during th summer and fall, according to present indica tions. The extensive building of the last year has stimulated lumber production until the effects of overproduction are being felt in a comparatively dull market, and lower prices are calculated on by consumers Trade in general continues fair. Failures of country dealers are becoming more frequent and involve firms heretofore conidered sound

Pig Iron.—There is a more cheerful feeling among makers in this district, which has been helped by the publication of account of stocks November 1. Furnacemen generally expect more satisfactory trade after New Year's, basing their calculations on the small visible supply and the improved outlook for increased consumption. We continue last increased consumption. We continue last quotations, noting that figures would have to be shaded about \$1 \$\pi\$ ton to place any considerable bills. We quote No. 1 Foundry at \$19 @ \$20; No. 2 Foundry, \$18 @ \$19; Gray Forge, \$16 @ \$19; White and Mottled, \$14 @ \$15; Car-wheel Metal, \$24 @

Ores.—We quote 50 % Brown Hematite, ton, \$2 @ \$2.75; Red Fossil, \$2 @ \$2.25. delivered at furna

Miscellaneons Articles,-Old Rails are eady at \$21 @ \$22; Stocks continue ght. Scraps, except No. 1 Wrought, may be regarded as nominal, as nobody handles any other. Wrought Scrap, \$18 @ \$22: Cast Scrap, \$11 @ \$14; Old Wheels, nominal,

Merchant Iron .-- Bar is slow at \$1.95 for large bills, 60 days, usual discount for cash. There is not much Iron from outside points Bolts, \$3 @ \$3.20; Spikes, \$2.35; Splices, \$2.

Coal.—We quote Fancy Lump, \$3; Common, \$2.50; run of mine to manufacturers, \$1.50 at mills.

Coke.—We quote Furnace Coke \$3 at point of consumption; Foundry, 10¢ @ 12¢

LOUISVILLE.

GEO. H. HULL & Co., Commission Mer-chants, report to us as follows, under date of Dec. I, 1883: There is little to add to the market reports of the last few weeks, and ss to subtract therefrom. Prices are quiet stocks are low, and if buyers are not anxious to buy, furnaces are certainly less anxious to sell. There has been a tendency on the part of first-class Car-Wheel Iron furnaces to advance prices. This does not seem to have

Irons. We still quote:		
FOUNDRY IRON.		
No. 1 Hanging Rock Charcoal	\$23.00 @	\$24,00
No. 1 Southern Charcoal	21.00 @	22.00
No. 1 Hanging Rock Stonecoal and		
Coke	19.50 @	
No. 1 Southern Stonecoal and Coke	19.50 @	20,00
No. 2 Southern Stonecoal and Coke.	18.50 @	19.00
"American Scotch "	18.00 @	19,00
Open Silver Gray	17.50 @	18.00
Close Silver Gray	16.50 @	17.00
MILL IRONS.		
No. 1 Charcoal	19.00 @	20.00
No. 1 Stonecoal and Coke, Neutral.	16.50 @	17.00
No 9 11 11 11	16.00 @	16.50
No. 1 " Cold-short	16.00 @	16.50
No. 2 " " "	15.50 @	16.00
White and Mottled. Cold-short and		
Neutral	15.00 @	15.50
CAR WHEEL IRONS.		
	80,00 @	81.00
Hanging Rock, Cold-blast	23.00 @	24.00
Alabama and Georgia, Warm and	40000 (69)	10 0100
	27.00 @	28.00
Cold-blast Central Kentucky, Cold-blast	27.00 @	28.00
		C/4 1

W. B. BELKNAP & Co., Iron and Stee Merchants, Nos 115 to 121 West Main street, report to us as follows, under date December 1, 1883: Bar Iron is without new feat-Mills seemed to have cried a halt on the decline, and further reductions would appear out of the question. Southern furnaces claim to be well sold up for the next few months, and if there is anything to note tis a slightly better feeling in recognition of this fact. There has been a good deal of cutting on the Iron card. This, with the offering of certain odd stocks by brokers, has aided the general demoralization. Hoops and Bands are still dull. Sheet is more active at the lower prices current. Decline tive at the lower prices current. Decline since July in this kind of Iron has been about \$10 7 ton. Nails are jobbing actively from the fact that no one has any stocks, and or ders are all of an urgent character for ship ment by first train. The meeting next week will decide whether December stoppage will take place or not. If there is none, prices will doubtless be weak. If, on the contrary, there is a unanimous agreement to stop, large buying will begin at once to cover Jan uary wants. Wire.—Unlicensed Barb Wire which is now sold largely in the West, can be had at a lower price than the licensed, the makers of which, for the time, are holding firm and refuse to book ahead. The outlook for business the first of the year would be by no means bad were it not for the frequent and large failures. The suspension of the private bank at Vicksburg, Miss., with de-posits of \$800,000, is apt to prove more dis-astrous than any failure thus far in the Southern country.

CINCINNATI.

DECEMBER 3, 1883.—Pig Iron.—Consumers are being supplied for present wants at quotations. Some inquiry is being made for round lots for delivery during the coming six months, and some producers decline to enter into contracts for late deliveries, while others are inclined to accept present prices. It is being developed that the production in the West and South will not be largely, if any, in excess of the requirements of con-Quotations for the past week are

No. 1 Hanging Rock Charcoal Foun- dry	\$23.00 (@ 23.50
Southern	19.50 (@ 21.00
No. 2, \$1 less.		
Hanging Rock Coke		@ 21.00
Southern	18.50 @	0 19.50
No. 2, 50¢ @ \$1 less.		
American Scotch	20.00 €	z 21.00
Silver Gray Softeners	19.50 @	0.30.50
No. 2, 50¢ less.		
Cold Blast Car Wheel	28.00 €	\$ 30.00
Warm Blast	24.00 @	27.00
orge	16.50 @	a 22.00
Stonecoal, Coke and Charcoal Scra		

ST. LOUIS.

HOFFER & Co., Pig Iron and Iron Ore Merchants, 214 Pine street, report to us as follows, under date of Dec. 1, 1883: Notwithstanding the depression now existing in the Iron business, there is a growing under current of opinion, intelligent and influential which looks forward to a more satisfactory trade during next year, and were it not Pres idential year, with the agitation incidental thereto, the prediction is freely made that business would be more than ordinarily good.

Missouri	20.00 @ 24.00 @	22.00
COAL AND COKE IRONS.		
Missouri	19.50 @. 18.50 @. 21.00 @.	19.50
MILL IRONS.		
Red-short	18.50 @ 17.00 @	19.50 18.00
CAR WHEEL AND MALLEABLE	IRONS.	
Missouri Southern Ohio		28,00

BALTIMORE.

W. N. WYETH, Iron and Steel Merchant, 46 and 48 South Charles street, reports us the following, under date of Dec. 3, 1883: Trade for the past week has ruled quiet, and that which is doing is being confined to small lots, to satisfy immediate wants. We contique to quote the list unchanged at annexed

Ref. Bar Iron, 1 to 6 x % to 1... % h 2 " 1 to 4½ x 1½ to 1... % h 2 " 3½ to 2, Round and Square... % h 2

op Iron, 114 wide and upward nd Iron, from 114 to 6 in. wide 214 @ 26-104 3 2-10 @ 3 3-104 5)4 @ 5)4 9 11 @ 12 ¢ rway Nail Rods. ick Diamond Cas chinery Steel. 534 11 41% 41% @ 4 @ 10 @ 21% @ Spring Steel.
Common Horse Nails.
It Railroad Spikes, 5½ x 9-16.
Perkins' Horse Shoes, # keg of 100 b.
Mule Shoes.

Our English Letter.

Review of the British Iron, Steel, Metal and Hardware Trades.

(From Our Regular Correspondent) LONDON, ENG., Nov. 19, 1883. THE TRADE OUTLOOK

does not improve in any respect, and that, notwithstanding the near approach of Christ-mas and the New Year, which are usually preceded by a period of pronounced activity in most of what are termed the "season" trades. For some reason or other we are now remarking the absence of much of this activity, and it is now so near the greatest holidays of the whole year that there is only the remotest chance of the hiatus being filled up. Reports from the principal hardware manufacturing centers are couched in tones indicative of disappointment and dullness, and I happen to know beyond question that in many branches of business the depression is becoming weekly more marked. On looking over the latest issue of your London contemover the latest issue of your London contempasary, the Ironmonger, I find sundry corroborations of what I have here stated. Taking some of the reports of that journal—which is generally considered to be reliable in its trade news—I find it stated that in "it is rather exceptional to meet with either agent or merchant in the city who can express an all-round satisfaction with the position of affairs at the present It is not that there is less doi: in previous years, for, as a matter of fact, in some of the branches which are considered the most discouraging a more than average trade has been done. The reason may trade has been done. The reason may rather be traced to the great increase in the productive capacity of individual works. This has naturally led to greater competition for orders, so that the works should be able to run full time. Prices have been reduced in consequence, and this has acted as a spur to a still larger production to keep up the aggregate profit on the year. The supply being so abundant, and makers being of necessity compelled to place their goods on some market, even though by means of consignments, merchants, in their turn, have had to cut quotations very fine. often, indeed, so fine as to cause others in the trade to wonder where their profit could be.

" Re From Birmingham it is reported: "Reports of business in the iron and hardware branches are of a very checkered character. and though some manufacturers are confesedly busy and likely to continue so till the year's end, many are complaining still of the smallness of orders and the disproportionate trouble imposed upon them to secure very small returns. The flush of orders noted a week or two since was evidently of a passing character, and all chance of a recovery in prices seems to have passed away with the drop in tin and the general reaction in the metal market. The low level of prices at this late period of the year does not encourage buying, because stocktaking is so near at hand, and large consuming firms would rather reduce than increase their stocks of metal in a weak or declining market. On the whole, however, the condition of trade is not satisfactory for this advanced time of year, and, unless some unlooked-for and early rebound occurs, the results of the present year's trading will be much less sat-isfactory for hardware manufacturers than

those of 1882. The Wolverhampton and District's correspondent remarks: "The last quarter of the year is not unfrequently the busiest in the wrought hollow-ware trade, since the home demand then assumes much briskness. Particularly is this the case in respect of those articles which are intended specially for culinary purposes. The condition of the business just now is pretty much exemplifybusiness just now is pretty much exemplying this rule. Manufacturers of tinned and enameled goods alike are pretty steadily ended. But it must be stated that there is no "push" about the orders. They are which is lighter in proportion to its capabilities then iron, and has some other good. numerous, but small, and the books of makers do not show much work ahead.

"A mod-

From Sheffield it is reported: "A moderate briskness has now suffused nearly all the industries mainly dependent on the domestic consumer, and employment generally is much better than it has been for some is much better than it Travelers are sending home respectable lines in electro-plate, cutlery and domestic hardware, and letter orders are numerous and fairly large. At the same time, speak-ing with a view of what is usual at this period of the year, manufacturers are not over-jubilant. The home trade is only one and the other support—shipping orders—is missing. The last quarter of the year is relied upon to make up somewhat for the fluctuating feebleness of the other three and correct the adverse balance, and a mere inrush of country trade falls short of the necessities of the case. Unless the manufacturer experiences such a crush as enables him, by judicious selection, to save a respect-able balance of orders to land him over the able balance of orders to find and over the first few dull weeks of the year he is scarcely satisfied with the season. The dearth of shipping orders is seriously felt by some of the larger establishments, to say nothing of specially, reports us anything like the proportion desired. Continental orders are quiet for all classes of the stagnation in the American and to small the contained and the same annexed annexed annexed (2.2.104) (2.

into which the trade, as a whole, got during the wages dispute."
Similar reports are printed from other

centers, and serve to illustrate my remarks as to the general flabbinoss of business. Such a state of affairs just now is regarded with apprehension, not only because it is bad per-se, but because a great many manufacturers rely upon the receipt of a surplusage of orders in November and December as a means of providing work during January and the early portion of February. As took occasion to remark last week, the broad outcome of this present lapse is the strong probability that the early part of 1884 will be a time of great quietude and probably of more than ordinary financial stringency. There are certain other causes at which may do something in the way of emphasizing this tendency. Prime among these is the new bankruptcy act, which is drawn in very strict terms, and will afford few, if any, loopholes for fraudulent debtors, or for "friendly" arrangements with creditors.
Everything of this kind, after January 1, 1884, will be conducted under the strict and incessant supervision of the Bankruptcy Court or the Board of Trade, so that the ancient practice of easy "whitewashing" will no longer be available, and the default-ing debtor will have to pass through the ing debtor will have to passive in open ordeal of a searching examination in open ordeal of a search search or oath. It is ordeal of a searching examination in open court with every statement on oath. It is anticipated that just prior to the advent of this law there will be a rush of failures, which will not be wholly disadvantageous, seeing that it will weed out a number of weak men. Among other causes I may mention the new patent act, which will strike a severe blow at the malpractices of firms and persons in the Black Country and elsewhere persons in the Black Country and elsewhere who have been in the habit of striking the word "patent" on their productions, even where no patent had been obtained. Many of these gentlemen will be caught with heavy stocks of sham "patent" and will be subjected to penalties should they

THE IRON MARKET

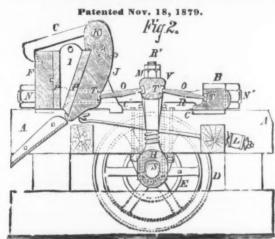
offer them for sale.

has again been without other than nominal changes, and remains quiet in almost every department of the trade. The market is very far from being active, but in some branches there is a fair amount of work in hand, with a sufficient number of orders in reserve to find occupation for the remainder of the year. That fact, however, does not mean much when it is remembered that there are now only about six weeks remaining of 1883. The outlook for the future is anything but good; consequently, prices are irregular, and in some cases makers are becoming really anxious as to the early portion of next year. The shipbuilding trade, which has been the mainstay of certain of the meaning of the production of the productive department of the productive department. the manufactured-iron departments for some years past, shows no symptoms of being sustained; indeed, all reports are agreed in regarding the prospects of this important industry as being very poor. Already, at some of the Scotch yards, wages are being reduced, and measures are in contemplation for making the reduction general in a short time henceforward. Should no change in shipbuilding come about within the near two or three months, it is probable that the Cleveland district will suffer severely, see-ing that about two-thirds of its rolled shipbuilding come about within the next two ing that about two-thirds of its rolled iron consists of shipbuilding sorts. Scotland will also be affected, but not so seriously as the North of England. The knowledge that such will be the case is the prime cause of the current low prices of pig iron in both the centers named, and is evidently deemed of centers named, and is evidently deemed of more importance than all the statistical and other facts which, under ordinary conditions, would have had influence in the opposite direction. Other causes of duliness may be found in the decreased demand for steel rails, and the absolute cessation of the American call for Bessemer blooms. The means of production of the newer kinds of steel are so large all over Europe and the United States, that nothing short of an enormous demand for rails can absorb the total product; consequently, now that rails are in comparatively poor request, a large surplus-age of Bessemer steel is available for other age of Bessemer steel is available for other purposes. In some cases, it is true, the make is being reduced, but in the majority of instances increased attention is being de-voted to rolled sorts, which are being pushed in all directions, with the result that a deal of iron is being thereby displaced. points. Should there be no revival as regards rails, we may expect to witness fur ther developments in rolled steel, all o which changes must needs tell against the consumption of finished iron.

The colliers' wages question is still unset-tled and does not seem to have made much progress during the week. A large number of notices is said to have been served and will shortly expire, but it would appear that the men's leaders are not yet quite sure of their ground, inasmuch as they have called over-jubilant. The home trade is only one another conference for the purpose of setof the crutches upon which they contrive to
though the year in times like these,
cant circumstance, and one which should be well weighed by the agitators, that on a poll being taken of the miners employed at the two largest pits of Newton, Chambers & Co., Thorncliffe, there was a substantial majority of votes against the proposal to serve notice for the advance. If the men really intend to proceed in this matter it would be advantageous for them to do so with as little delay as possible, the present uncertainty being even more harmful to the coal and iron trades than an open dispute on a definite issue, unless, of course, the latter should be unduly prolonged. At Glasgow the warrant market has been dull and inanimate, even the firms who rely almost entirely upon their though quotations have been a little better foreign and Colonial connection. With all than the closing figures of last week, the foreign and Colonial connection. With all than the closing figures of last week, the hands at liberty to cope with whatever turns final rates being 44/6 ? ton. Makers' brands up, the stimulus in the country trade is but of Scotch pig iron are all 6d. @ 1/ P ton little felt, and stock is not diminished in lower, probably influenced by the large com-

THE NEW BLAKE CRUSHER

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The most economical and reliable Crusher in use. Superior in all respects to our old style Blake Crushers, and rapidly superseding them and all imitations. For railway ballast, Macadam road making, and crushing of ores of all kinds it has no competitor.

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"A" represents the Creeper in position ready for use "B" shows the Creeper thrown back entirely out of the way when not in use, or walking in doors

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Its simplicity of construction, being easily adjusted, always ready for use, and when not needed can be instantly turned under the "Shank" out of the way, therefore not interfering with walking in the house on carpets, &c. When in position for walking on ice, it is a sure protection from falling Can be ordered at manufacturers' prices from

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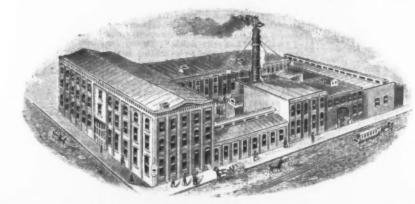
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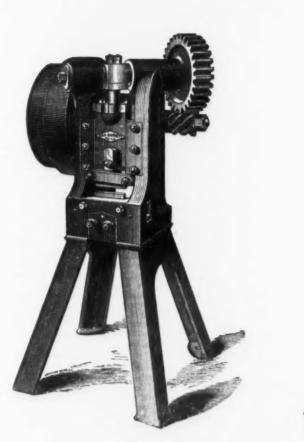


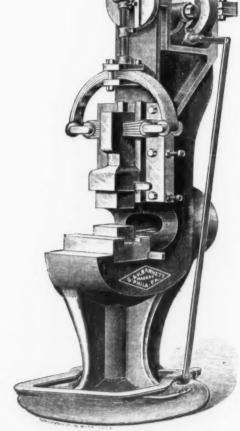
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FOR FORGING FILES AND OTHER W





IMPROVED SHEARS.

IMPROVED POWER HAMMER.

Having had many years' experience in the use of Power Hammers, and knowing the defects and weak points of same, we can offer an article to the public which cannot be surpassed for durability and workmanship.

Our Shears for cutting up Steel to one and one-half by seven-sixteenths, Iron two and onequarter inch by one half, cannot be beat for Speed, Strength, Durability and Neatness. The Cutters are clamped on their respective places, and can be taken out and put in readily. They have no holes in, neither have they any bolts to break, and can be used up very small, thus saving Time and Steel, and always remaining solid.

We are now prepared to manufacture above Shears, and Hammers, 15, 25 and 50 lbs., at short notice. Quotations will be given upon application to

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are being substituted for the inglate prices all-mine brands of Staffordshire and Shrop-shire. All other classes of crude iron are nominal and irregular, the uncertainty of wages being detrimental to the conclusion of forward arrangements, besides which the general outlook renders buyers more than ordinarily cautious. As regards all sorts of finished iron, we have virtually nothing new to report, a quiet demand and nominal quotations being the leading characteristics of the situation. Canadian orders are reported for strips at about £6, 2/6 and £6, 5/, while hoops are inquired about for several export markets at about £6. 10/. There is a moderate call for sheets for making up and galvanizing purposes at £7. 12/6, and and gaivanizing purposes at \pounds_7 , 12/6, and \pounds_7 , 15/ for singles, and other sorts pro rata. Marked bars are still \pounds_7 , 10/; medium, \pounds_6 . 10/ @ \pounds_7 ; common, \pounds_5 . 17/6 @ \pounds_6 . 5/, and ordinary Welsh, \pounds_5 . 7/6. In old materials there is no change to report, save that sales there is no change to report, save that sales of old D. H. rails are reported at equal to about 65/ \$\frac{1}{2}\$ ton, f.o.b. Liverpool and Southampton, for shipment to San Francisco. Similar sorts are called 70/ \$\frac{1}{2}\$ ton free at works in Staffordshire. Good No. 1 heavy wrought scrap could be bought at 53/ \$\frac{1}{2}\$ ton, net cash, f.o.b. London, or other

SCOTCH PIG IBON

has been very low during the week, but re-covered on Friday, and closed strong at 44/4 covered on Friday, and closed strong at 44/4 (@ 44/7 for cash, after having been down to 43/10. Under ordinary circumstances the value of warrants ought to be regarded as being so low as to justify purchases, both for speculation and investment, yet there does not appear to be any desire on the part of the public to participate in the "good thing" on hand in the warrant market. Scotch makers' brands are all rather lower, notwithstanding the stoppage of the whole notwithstanding the stoppage of the whole of the eight furnaces at Dalmellington and a further decrease in stocks last week. There are now 101 furnaces, including 8 on hematites, at work in Scotland, against 114 a year ago. In Connal's stores the quantity year ago. In Connal's stores the quantity of pig iron is 587,335 tons, as compared with 617,308 tons this date 1882. The shipments last week fell off, making the increase to date 6355 tons only, while Middlesboro' pig importations into Scotland have increased by 24,682 tons. Writing from Glasgow November 17, James Watson & Co. said: "During the past week the Scotch iron market has fluctuated between 42 of and 44 / 1014. with a fluctuated between 43/9 and 44/10½, with a considerable business done in warrants. The demand for makers' iron remains quiet, and there is very little change to report in quota-tions. On Monday last the market here was tions. On Monday last the market here was steady between 43/9 and 43/10½, cash. On Tuesday it improved from 43/10½ to 44/3½, and on Wednesday business was done from 44/2½ to 44/6½, cash. Yesterday the market was strong, with a large business from 44/4 to 44/10½, cash. To-day the price receded from 44/8 to 44/4½, closing with buyers at the latter figure. The shipments last week were 7574 tons, as compared with 12,199 tons, for the corresponding week of last year." We quote:

				NO. 1.	NO. 8.
G. M. B., at	Glasgov	w	 	46/	44/
Clyde,	0.0		 	48/6	46/
Coltness,	0.9		 	86/	51/6
Langloan,	6.0		 	36/	51/6
Gartsherrie.	6.6		 	58/6	50/6
Summerlee,	4.0		 	55/	49/6
Calder,	5.6			56/	425/
Carnbroe,	*4			53/6	48/
Glengarnock,	at Ard			53/6	46/6
Eglinton.		66		46/6	44/
Dalmellington		6.6		48/6	47/
Shotts, at Lei				56/6	58/
Kinneil, at Bo				47/	45/6
Carron, at Gr				48/	47/6

MIDDLESBORO' PIG IRON

remains extremely unsettled and weak features which are likely to be intensified by the cables from your side this morning, announcing a considerable reduction of the output by your ironmasters. At Middlesboro' there is palpably no confidence in the near future of the local and general iron rade, and prices are nominal, even at the appended low quotations, No. 3 being 37/3 (@ 37/6, and perhaps less, for the first three months of next year. G.M.B., fo.b. at makers' wharves in the Tees, less 2½ % dis-

io.	1 Founds	Y	41/6	Mottled
11 0	10		39/6	White
** 8			87/6	Refined Metal
** 4	0.0		35/9	Kentledge
4 4	Forge.		86/6	Cinder
				of pig are being

demand for shipbuilding iron appears to be quite dead for the time being. The large works will be well occupied up to the end of the year; after that, "the Deluge!"

HEMATITE PIG IRONS

are quite as dull as at any time these three months past, which is saying a good deal. The demand from the Bessemer concerns is poor, but the low values of these high-clas pigs are bringing numerous orders for small lots for foundry purposes. Mixed parcels are called 46/6 @ 47/6, and West Coast makers' brands are as under: No. 1. No. 2. No. 3

Planton			49/6	49/	48.7
			35/6	487	47/4
			48/6	48/	47/0
			48 6	48	47 0
Distington	1			414/	\$16./
Harringto	n			48/6	48
Solway			48/6	486	47.0
Maryport			48,6	48/	47. 0
North of	Eng	land	sorts, f.o.b.	Cumbe	rland

ports, &c., are quoted:

No. or quality.	Ordina	ry. Besseme
2	BL/	49/
4. Foundry	49/	47/
Mottled	 497	47/
White	\$11.	

Last week's West Coast shipments included 12,676 tons of pig and 4755 tons of steel rails.

THE NEW STANDARD WIRE GUAGE. ntly sanctioned by the Board of Trade and legalized by an order in Council, having been regarded with much disfavor by the been regarded with much disfavor by the manufacturers of sheet iron and other rolled metals, these gentl-men sent a deputation to Mr. Chamberlain on November 8, to complain of the injustice, &c., with which they were threatened. Everybody looked upon the new wire gauge as being binding upon the whole trade; consequently, the sheet men were much relieved and gratified when Mr. Chamberlain told them they were not comp Chamberlain told them they were not com-pelled to use the new standard for sheet metals, but might use any gauge they liked. in ge

are being substituted for the higher-priced The net result, therefore, is that all the agitation and worry about a uniform gauge has simply been the addition of another gauge to the score or so already in existence TIN PLATES

may be termed steady and moderately firm, although there are, perhaps, one or two undersellers whose efforts to bear the marundersellers whose efforts to bear the market are not entirely devoid of success. A good deal of buying has been noted for Australia and China—the latter taking large quantities of wasters, which the countrymen of Ah Sin "likee velly much." Buyers for the States are reported to be holding back, and profess their inability to place orders at anything over 16/ for known brands of cokes, or 15/9 for the newer and less known sorts. There are said to be sellers at both sorts. There are said to be sellers at both these limits; consequently, the figures may be taken to represent current prices, just as 15/3 @ 15/6 stands for coke-tin wasters and 15/ for good lines of 14 x 10 wasters. For best coke tins and steel plates with coke finish the demand is steady, at 17/@ 17/6 for I. C. There is a run on odd sizes, especially 10 x 20. Charcoals are quiet at 18/@ 19/ for ordinary, and 20/ @ 21/ for best brands I. C. For charcoal ternes prices are 16/ for 14 x 20, and 32/ for 28 x 20 sizes Should metals recover, all tin-plate prices

FOREIGN.

FRANCE.

would grow firmer pro rata.

(Moniteur des Interets Materiels.)

FRANCE.

(Moniteur des Interets Materiels.)

PARIS, Nov. 18, 1883.—Metals.—Business has been looking up in this city, but dull in the department where they complain of English, Belgian and German competition; fortunately, the vintage has been abundant and puts 300,000,000 francs in circulation, which will cause a revival there. Metals have been inactive and barely steady. We quote: Copper—I Chili Bars, 156.25 & 160: Ingots and Slabs, 163.75; Best Selected, 168.75; Pure Corocoro Ore, 162.50; Banca Tin, 252.50; Billton, 247.50; Straits, 246.25; Australian, 246.25; and English, 245. Lead, 26.50 & 3.50, and Spelter, 39.75 & 40.50. Iron.—A break has occurred in this market in Merchant Iron, which has given way to 17.50 francs \$\frac{1}{2}\$ 100 kg., but as the North remains firm this decline can only be temporary. We quote Flooring Iron 17.75; Charcoal, 24; Sheets, 28 & 28, and Wire Nails, No. 18, in bulk, 27. At the North a movement is on foot among rolling-mill owners to advance the price of Merchant from 17 & 17.50. In the Haute-Marne the market has become quieter, but it nevertheless remains steady in view of the many orders still to be filled, which provide work for three months to come. Founders of hollow-ware there with their increased capacity of production, however, find it difficult to keep busy all of them, especially at this season of the year when the demand abates. In the Meurthe and Moselle : the Longwy district, contracts have been renewed to the extent of 300,000 tons Pig Iron, which secures the blast furnaces there work for 10 months to come. The Joeuf Steel Works with their new arrangements completed consume alone all that can be turned out by three blast furnaces. No. 3 Foundry is quoted there, 7:90, and Puddling Pig, 5:80. At the Center at St. Etienne, a revival has at length also occurred. From what precedes it will be seen that the state of affairs in the Iron line is quite sound and prosperous, and the future, if anything, promising. Coal is moderately active at steady prices.

BELGIUM.

BELGIUM.

(Moniteur Industriel.)

BRUSSELS, November 19, 1883.—Iron.—The week has been about as dull as can be. Rolling mills in Helgium have laid in their supplies of Pig Iron and Coal at rates forbidding their selling below the current figures at which Finished is held, unless they want to lose money. While this is the case every-body complains of the uncertain effect of local politics, which causes to depress business; nothing new in the way of adjudications turns up in the meantime, and the best that can be done is to take stock and prepare for the balance sheet of the year as is usual about this time of the year. English Pig Iron does not bring over 5.70 francs the 100 kg.; Foundry is quoted 7 at Charleroi, and in Luxemburg it sells for 5.80. Puddling Pig remains steady at 5.30 for prime and 4.50 @ 5 for middling and ordinary qualities. Athus-Halanzy remains firm at 4.90. Merchant Iron has become firm at 12.59; No. 1, 13.50; No. 2 and No. 3 weak at 14.50. Beams are upheld with some difficulty at 13, and Corners at 14.50. No. 2 Sheets command 17 francs; No. 3; Commercial, 23; Thin, 25, and No. 4.27 francs. During the first nine months the import of Steel Raiis into Belgium has been only 740 tons, whereas there have been exported 54.781 tons. The export of Nails has fallen off somewhat, for it has been only 526 tons against 7713 last year. At Charleroi makers get on slowly, from hand to mouth; they are not altogether without work, but there is now prospect of a speedy revival and all they can do is just to save themselves from losing money. Coal, though tolerably active, has been more irregular; at Liege industrial is neglected, at Mons it is, on the contrary, in demand. Domestic livelier.

(Borsenhalle.)

HABBURG. Nov. 19, 1883.—Iron.—The tendency is still decidedly downward pretty much throughout the list. Steets resist this tendency best, and Steel is even higher, but Pig and Fimshed Iron is for the moment quite neglected. In Loralne there has been a break, prices now being between 20 and 25% to wer than they were in April. The improvement in Steel and its products was shown at late adjudications. Of furnaces there were in operation within the Customs' Union on Oct. 1: 72 puddling, 13 spiegel, 18 Bessemer, 14 Thomas and 31 turning out Foundry Pig. Prices are the same as given in our previous report. The Excstorff Iron and Locomotive Company, of Hanover, has paid a 15% dividend for the 12 months ended Oct. 31, turning out products to the amount of 4,648,345 marks, against 2,487,387 the previous year. Of 99 locomotives made 44 were for export, and they have now orders for 75 more; the fresh orders on hand on Nov. I represented a value of 3,990,000 marks. The company employs at present 1503 mea, against 914 last year. A great consolidation is going on on behalf of the Laura Works (in Prussian Silesia) with the prosperous concerns that had been founded in Poland under the auspices of the company. These have declared dividends of between 45 and 69 of late years under cover of the bigh protective, or rather prohibitive, Russian duties, the main object being the production of Steel Rails in Russian Foland, an enormously profitable business. Metals have been excessively duil. Lead is lower. We quote English Pig. 14.39; ditto Sheets, 14.75; German, 12.50, and Spanish, 16.50 marks 250 kg. Copper is also casier, Proutheim selling at 29.53; Lake at 70; Electrolytic, 77, and English, 70. Tin, without anything doing, may be quoted 103 @ 104, and Spelter inactive at 15.15 @ 15.50.

Cologne Gazette.)

DUSSZLDORF, Nov. 19, 1883.—Iron.—The market is generally depressed. We quote to-day, \$\psi\$ ton: Spiegel, prime, 61 & 65 marks; White Pig No. 1, 54; Luxembourg Pig, 37 & 38; Charcoal, 76 & 82; Foundry, No. 1, 70; No. 2, 65 & 67; No. 3, 57; Spanish Mudela, at Ruhrort, 78 & 80; English, No. 3, there. 56; English Bessener, at port of shipment, 46 & 62 & 7; Spanish Mudela Bessemer, at Rotterdam, 58 & 53; German Bessemer, 55 & 56; Merchant, 129 & 140, and Sheets, 165 & 185. Coal and Coke active and looking up.

HOLLAND.

(Koch & Vlierboom.

ROTTERDAM, Nov. 17, 1885.— Tin.—Our market has been irregular; a slight improvement has soon been lost again. We quote to-day: Billiton, spot, 53, 25 guilders § 50 kg; do. distant futures, 52, 75; Banca, spot, 54.50, and from impending sale, 54.50.

SPAIN.

(Revista Minera.)

and freight rates have improved. Campanil Ore sells at 7/ @ 7/3 there; Rubio at 6/6 @ 6/9, and Vena at 7/6 @ 7/9.

SPANISH IMPORT AND EXPORT—FIRST EIGHT MONTHS. Importations.

	1882.	1983.
	Tons.	Tons.
Coal	761,490	812,834
Rosin and Pitch	17,606	15,524
Crude Petroleum	20,487	25,091
Refined Petroleum	284	658
Glass and Glassware	3,249	3,545
Steel	1,421	1,035
Iron and Hardware	80,187	70,944
Tin Plates	2,379	2,663
Brass Goods	581	674
Brass Wire	4,562	4,702
Salt	1.575	402
Machinery	17,882	15,562
Total	911,478	958,160
Exportation	9.	
	1882.	1888.
	Tons.	Tons.
Quicksilver	1.027	489
ngot Copper	14,258	15,947
ron	29,554	86,069
lead	77,470	
Zinc Ore	22,839	83,477 25,466
Copper Ore	407,978	407,082
	2,844,958	3.014.034
lalt	157,911	158,778
Other Minerals	42,514	62,412
Total	3,598,524	8,798,699

CHILL.

SHIPMENTS-FIRST EIGHT MONTHS.

To the North of Europe To the Mediterranean To the U. S., Atlantic. To the U. S., Pacific.	3,355,729 35,126 783,648	1882. Quintals. 5,110,414 74,517 801,786 124,971	1883. Quintals. 6,231,239 167,206 673,480 116,578
Total	fortnigh the Unit we quote	at, 47,000 ed States. Newcas	Coal- tle, 81/3;

EAST INDIES.

(Schmidt, Kustermann & Co.)

Penano, Oct. 6. 1889.—Tin.—Receipts during the fortnight have been 6600 piculs; of these, Europeans took 8100, and Chinese 1800, with a gradual decline from \$23.35 to \$29.10, at which latter figure the market closes firm, with a stock in Bazar of 1200 piculs. Exchange, 4 months' bank, 3/834.

AUSTRALIA.

(Per Cable via London.)

Sydney, N. S. W., Nov. 8, 1823.—Hardware, irregular; most buyers stand aloof, but some firms buy largely. Galvanized Iron steady at £12, 2/6, and do. Iron Wire at £21. Scotch Pig firm at £4 for No. 1 Clyde.

The London Ivory Sales .- As of interest to the cutlery trade of this country, we note the quarterly sales of ivory in Lonwe note the quarterly sales of ivory in London, which commenced on October 25th and closed on the 30th. The quantity of ivory offered was 44¼ tons of East Indian; 25¼ tons of Egyptian; 20¼ tons of West Coast African; 2½ tons of Cape of Good Hope; 6¼ tons of Mammoth (Siberian); 2¼ tons of seahorse tusks, &c., and 2¼ tons of waste, chips, cuttings, &c., making a total of 104 tons, of which 99½ tons were sold, against 67½ tons offered at the corresponding sales of last year, and of which 64¼ tons were sold. The attendance was not large. were sold. The attendance was not large, several of the important regular buyers being absent. Notwithstanding this the sales opened and continued with a firmness of tone more than equal to anticipation. The quantity of newly imported elephant ivory did not much exceed 80 tons, and all sold More than helf of that quantity consisted of ivory from East India, Zanzibar, &c., the greater proportion of which was in the whole tusk, and for the most part hard. The Egyptian was chiefly fair to fine quality, and consisted of Alexandrian and Maltese. The comparative absence of very inferior ivory from Alexandria was recarded as indicative. from Alexandria was regarded as indicative of the supply of such becoming exhausted. The supply from West Coast Africa was quite up to the average, the Niger being extremely good. The Cape ivory was fair on the whole, and the Mammoth exceptionally good in part. The seahorse tusks were about the same as usual. English and German dealers and manufacturers were the chief buyers. Very little was purchased for Franch

the river is over a mile wide, and is divided into two channels by an island. Thus there will, in reality, be two bridges. The longest span is to be 520 feet, and most of the remaining the state of th maining ones 400 feet each.

Steel for Cutting Tools .- C. Reichel, of berlin, gives the results of many years' observation on the preparation of steel for tools, in the Zeitschrift fur Instrumentenkunke: "First, the steel must only be heated to dark red, which is the temperature which a film of soot burns off. Second the heated articles must be carefully pro-tected from oxidation; hence a flame rich in carbon must be used, and the immersion be done as quickly as possible, so as not to keep it long in the air. Thirdly, water used for hardening must be free from alkalines and

The fourth of the series of experiments with the 80-ton gun was carried out at Shoe-Madrid. Nov., 1863-Fron.—Ore has continued buryness, England, on November 8. A good request at Bilbac: vessels are scarce there,

consisting of a compound slab of iron and steel, 5 feet square, the iron being 12 inches thick and the steel 6 inches. The huge gun, mounted on an experimental carriage on a line of rails about 200 yards from the target, was loaded with a charge of 450 pounds of prism No. 1 powder and a Palliser projectile weighing 1700 pounds. Only one round was fired, but this demonstrated again that the 80-ton gun is still superior to any armor plating that has yet been submitted to its powers. The 18 inches of iron and steel were not only cut through, but the target, with its 36 inches of oak backing, was completely smashed pletely smashed.

Frederick Ives, of the firm of Ives & Miller, axle manufacturers at Mount Carmel, died at New Haven, at noon, Tuerday, of typhoid fever. Mr. Ives was president of the New Haven Palladium Newspaper Company, and was interested in numerous other business enterprises.

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FRUIT CAN AND TOOLS,

Canners' Outfits, SQUARING SHEARS. &c.

P . S. & W. Co.'s Tinners' Tools

WRITE FOR OUR CATALOGUE AND PRICE LIST. Please Mention this Paper

RECENT BOOKS.

Wahl. - Galvanoplastic Manipula. tions. A Practical Guide for the Gold and Silver Electroplater and the Galvanoplastic Operator. By William H. Wahl, Ph. D. 189

This volume is based upon Roseleur's (French) treatise, widely known as a reliable and useful work of reference. In addition to the valuable instructions derived from that work, all the more recent and impor-tant processes, methods and formulæ repre-senting the present state of the art as practiced in the United States have been introduced. The work is divided into three parts, and comprises the electro-deposition of all metals by means of the battery and of all metals by means of the battery and the dynamo-electric machine, as well as the most approved processes of deposition by simple immersion. The descriptions of the instruments and apparatus used in the art are complete and well illustrated, and the chemical products employed are de-tailed and their characteristics described. tailed and their characteristics described. The methods of electrotyping, nickel-plating, bronzing, tinning, brassing, &c., are discussed at length. A very complete index accompanies the volume, and a full list of American and British patents relating to the subject of electro-metallurgy is given in the appendix. Written in a clear style, and printed in large type, the book will commend itself to the practical mechanic as a thorough instructor and reliable work of reference in every detail and process of the art of

every detail and process of the art of electro-metallurgy.

Ganot, Adolphe.—Elementary Treatise on Physics, Experimental and Applied. Translated from the French by E. Atkinson. 11th Edition, revised and enlarged, \$5.

Gordon, J. E. H.—Physical Treatise on Electricity and Magnetism. New edition, revised and enlarged, two volumes, \$10.

Hale, P. M.—In the Coal and Iron Counties of North Carolina. \$1.50. Hayden, F.V.—The Twelfth Annual Report of the United states Geological and Geographical Survey, for 1878, embracing Wyoming and Idaho. Two volumes, \$5.

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Wholesale Hardware Prices, December 5, 1883.

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	Wholesale Metal Prices, See Page]
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	### Writing's Hand Drill, Plain, \$11.00 Adjustable, \$12.00 dis 26% to \$ Wilson's Drill Stocks. dis 10 \$ Automatic Boring Tools each, \$2.25, dis 20 \$ Drill Chucks. Morse's Beach Patent each \$8.00 dis 20 \$ Morse's Adjustable each, \$7.00 dis 20 \$ Danbury each, \$8.00, dis 30 \$ Lygg Beaters.	C
-	Danbury	F
-	Standard # gross, \$18.00, dls 25 \$ Family (T. & S. Mfg. Co.) # gross, \$18.00, net Acme # gross, \$12.00, dls 25 \$ Trumpa (T. & S. Mfg. Co.) # gross, \$12.00, dls 25 \$ Trumpa (T. & S. Mfg. Co.) # gross, \$11.00, net	4.
	Mill E. Buckets, light, 3½ to 10 in (Duc's Improved), Mill E. Buckets, light, 3½ to 10 in (Duc's Improved), Mill E. Buckets, light, 50 io in (Duc's Improved), ½ dos. \$5.60 & \$10.00. dis 10 \$ Storehouse (Duc's Patent), 12 to 17, \$12 @ \$20 dis 10 \$ Emery.	0
-		00000
-	Regular numbers	0001
	Kacutcheons	10 mm
	Wooddis 55 % Exaucers	1
	Tenn's dis 40 %	1
	Ancher Lock	A 25 mm 25 mm
	Metallic Key, Leather Lined	1
	Files	000
	## ## ## ## ## ## ## ## ## ## ## ## ##	1
	Union File Co	
-	Finting Machines. new list, dis 756630 % Knox, 456-inch Rolls	
	Eagle, 556 inch Roll. 2.55, dis 35 % Crown, 456 in., 83,50; 6-in., \$4,00; 8-in., \$6,50 each, dis 35 % Crown Jewel. 4.61, \$6,50 each, dis 35 % American, 5-in., \$1; 6-in., \$3,40; 7-in. \$3,50 each, dis 35 %	1
	Geneva Hand Fluter, White Metal. & doz \$1.50 each, net Crown Hand Fluter, Nos. 1, \$15; 2, \$12.50; 3, \$10.00 Shepard Hand Fluter No. 8. dls 30 \$	1
	# doz. Shepard Hand Fluter, No. 8., per doz \$1. dls 55 Shepard Hand Fluter, No. 10., per doz \$1. dls 55 Shepard Hand Fluter, No. 10., per doz \$1. dls 15 Shepard Hand Fluter, No. 10., per doz \$5. co. dls 15 Clark's Hand Fluter No. 10., per doz \$5. co. dls 25 Combined Fluter and Sad iron \$1. doz \$1. co. dls 15 Buffalo. \$1. doz \$1. co. dls 15 Fluting Scissors \$1. doz \$1. co. dls 15 Forks. \$1. doz \$2. co. dls 15 Forks. \$1. doz \$2. co. dls 15 Forks. \$2. doz \$3. co. dls 15 Forks. \$2. doz \$3. co. dls 15 Forks. \$2. doz \$3. co. dls 15 Forks. \$3. doz \$3. co. dls 15 Forks. \$4. doz \$2. doz \$3. doz \$4. doz \$3. doz \$4.	
	Burrato	
	Hay, Manure and Spading	
-	Hay Manure and Spading dis 40 5	
	Caugess dis 408 10 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
10 10 11 10 10	Nall and Spike	
40 00 00	Double Cut, Douglass' dis ±6&10 % Beel " Fgro. \$12.00, dis ±5 % Giue Pots. Fgro. \$12.00, dis ±5 % Tinned and Enameled	
	Gillo Pols. Gillo Pols. Gillo Pols. Gillo Pols. Gillo Family, Howe's Eureka Gillo Family, H. F. & C. "Handy Gillo Family, L. F. & C. "Handy Gillo Family G	
	Reading Hardware Co.	1
01010	U. M. C. P. E., 11 up. 3,10 U. M. C. P. E., 9&10. 4.00 U. M. C. P. E., 7&8. 4.90 T ack **aws. 4.90	
6	Halters.—Covert's Pat. Rope	
	Family, Howe's Eureka " dis 40 \$ Grindstone Fixtures. dis 40 \$ Grindstone Fixtures. dis 70 \$ Sargents Fatent. dis 70 \$ Sargents Fatent. dis 70 \$ Sargents Fatent. dis 90 \$ Sargents Fatents Fa	
2000	Humason & Beckley dis 15 Verree dis 5 Nelson Tool Works dis 4 Nelson	
Now Se Se Se	Humason & Heckley. dis 15 k Verres. dis 5 k Magnetic Tack, Nos. 1, 2, 3, \$1.26, 1.50 and 1, 74. dis 2&2.10 K Nelson Tool Works. dis 2&2.10 k Warner & Nothe's dis 10 k Wilkinson's Smiths' dis 25 k Hand Cuffs and 1.cg from. Providence Tool Co., Hand Cuffs, \$1.50 € doz. dis 10 k Providence Tool Co., Leg Irons, \$25.00 € doz. dis 10 k Tower's.	
Manna	Providence Tool Co., Hand Cuffs, \$15.00 \$\frac{1}{2}\$ doz.dls 10 \$\frac{5}{2}\$ Providence Tool Co., Leg Irons, \$25.00 \$\frac{7}{2}\$ dozdls 10 \$\frac{5}{2}\$ Tower's	
84.94	Tower's dis 2 strong strong strong strong dis 2 strong strong strong dis 2 strong d	
2000	Japid Store Door Handles—Nuts, \$1.02 Plate. \$1.101 100 Plate, \$0.88.	
1 0 0 0 m	Lifting dis 60210 \$ Saw and Plane dis 90210 \$ Boynton's Loop Saw Handles 50 dis 95 to 10	
E E	Hammer and Hatchet dis 20 % Grad awl Brook \$2.50 dis to 2	1

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	The state of the s	C
Barr	a Door, old patterna	S
Cha "Ch	dis 50 % lilenge. Medina Mfg. Co. \$15: dis 50 % ling Improved Anti Friction	M
Che Kide U. S	dis 50 %	C
The Terr	"Boss" dis 50& 10 % 10 % 10 % 10 % 10 % 10 % 10 % 10	
Ane		L
Fite	this install is the state of th	AY
Sarg	rent's dis 70%10 5 man, old list dis 75 5 man Sargent's new list dis 60%10 5	10
Cov	ert. dis 50 % ered Spring, new list, Oct., 1882 dis 60&10 % on dis 50&10 %	F
Uni tal	on Improved German	BAN
Cl	aw, Nos. 1 2 3 & doz 7.75 8.50 9.25	HHAN.
SE	aw, Nos. 1 2 3 # doz 7.75 8.50 9.25	1
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B	road, Nos. 1 2 3 4 . 8 doz 9.00 10.00 12.00 14.00	
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Pec	law, Nos. 1 2 3	1
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AX H	Pattern, Nos. 123	1
Wa	dsworth'sdis 33½ ½ linges	1
Gat	dswortn's dis 33% s	
Gat	te, Automatic # doz \$1.50, dils 50 5 te, Common Sense. # doz pair \$4, 50, dils 50 5 te, Sensour's	1
Gat Rol Rol	te. Shepard'sNos. 1, 2, 3, 10, 20 & 25, dis 50&10 \$ lied Blind Hinges	1
Pla Pla	lled Kaised	1 84 1
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Ser	*ew Hook and Eye \$ in \$ doz \$2.45 \ 10 %	
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Pla	reted Shank	1
Ma	gte. ・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・・	
Bir Cot	10	
Cot Bel	tton Patented (N. Y. Mallet & Handle W'ks),dis 30 % tton (Humason & Beckley Mfg. Co)	
l V	Veston's, No. 1, \$10.00; No. 2, \$9.00 ₹ doz, dis 25&10 %	
Cle	thes Line, Sargent's list	
Co	GGIII S, \$4.00 \(\) doz	
Pic	re Coat and Hat, Miles	
Wi	ture Hooks, Brown's Fat. Solid Brass, \$4.00 & 7008. 7008	
He	ooks and Eyes-Malleable Irondis 60&10 %	
Cli	inton, Plain, * b 23e 21e 20e 19e 18edis 30&10 % inton, Fin., * b 21e 22e 21e 20e 19edis 30&10 % sex. * b b 21e 28e 20e 25e 24e 24edis 30&10 %	
Vu Gle	tham "27c 24c 22c 21c 20c 19c	
Ch	C., "26e 23e 21e 26e 19e 18edls 10&10 5/mpl'in forged "31e 28e 26e 24e 24e 23edls 305/mpl'in w Haven, "31e 28e 26e 26e 24e 23edls 305/m5/mpl'in idgewater, "24e 21e 19e 18e 17e 16edls ranae, "26e 23e 21e 20e 19e 18edls 28f Horse Shoes.	
Br	w Haven, "31c 28c 26c 25c 24c 23cdls 35&16 % dagewater, "2ac 21c 16c 18c 19c 16cdls ranac. "26c 23c 21c 20c 16c 18cdls 2.5% Horse Shoes.	
K.	rame. iderse Shoes. iderse Shoes. iderse Shoe Co., Perkins' Improve. jekt, Medium and Heavy. iderse Shoe Co., Perkins' Improve. jekt, Medium and Heavy. iderse Serged, Light, Med. or Heavy. iderse Serged, Serged	
Mu Du	lle Shoes. # keg \$5.37% inning's Steel. # keg \$9.25 ce A wile. Chinein, &c.	
No.	American Ice Chisel \$\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Du W	mlep's king Picks	
Ice Ice	e Mallets, Pick in head	
An	in Dination lee Tools	
Pa Sai	mbination fee Tools \(\forall \) doz \(\forall \) & co net to \(\text{tree Cress} \) and \(\text{tree Cress} \) and \(\text{dis 40 \circ Cress} \) \(\text{ce Cress} \) \(\text{Fross \$25 \circ dis 40 \circ Cress} \) \(\text{Fross \$25 \circ dis 10 \circ Cress} \) \(\text{Fross \$25 \circ dis 10 \circ Cress} \) \(\text{dis 10 \circ Cress} \) \(\text{ce Tongs} \) \(Fross \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ dis 10 \circ Cress \) \(\text{Cress \$35 \circ dis 10 \circ di	
Ar Ch	cetic Solid	
B	etties. Brass, 7 to 17 inches inclusive	
Nic An	K nives.—Ames' Butcher Knives dis 20 % chois' Butcher Knives dis 20 % chois' Butcher Knives dis 15 % dis 15 %	
Mo Ha	### Brass, 7 to 17 inches inclusive. ## B 28c net ass larger than 17 inches ## B 35c net knives. ## B 35c net knives. ## B 35c net chois Butcher Knives dis 26 % chois Butcher Knives dis 16 % 16 % 16 % 16 % 16 % 16 % 16 % 16	
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Do	or Por. Jap'd Same discounts as Door Locks	
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L	utter, Porcelain dis to&10 \$ adles. I Melting, Sargent's dis so&10 \$ Stray, Reading dis so&10 \$	
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Tu Na	bular No. 0, \$7.50; No. 1, \$9.00 t not	
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Eu Du	reemi lined # dos 80.0, dis 34 se 36d # dos 40 se 36d # 34 se 36d	
58	minis	

	Lines.—Linen Fish
200	1.tnes. — Linen Fish dis 25&10 % Cotton Chalk dis 4,8 Silver Lake, Braided, Nos. 0, \$6.00; No. 1, \$0.50; No. 2, \$7.00; No. 3, \$7.00; No. 4, \$0.50; No. 4, \$1.00; No. 4, \$1.00; No. 4, \$2.00; No. 4
7.7	456, \$2.50net Masons' Colored Cottondis 45 & Wire Clothes Galvanizedeach 2500 net
1	Locks and Latches. Cabinet, Eagle
000	Cabinet, Bridgeport) dis 40 % dis 20
	Masons Colored Cotton Wire Clothes, Galvantzed each 2xc@ace net Locks and Latches La
1	Round Key, Nos. 1 to 5
	Flat Key
1	"Shepardson "or "U.S."
1	F. Many's "Extension Cylinder"\$10.50 & doz net Barnes Mfg. Co
	Branford Norwalk Norwich
	P. & F. Corbin
	Nimick & Brittan Hard- ware Mfg Co
	Branford Norwich State S
	William Wilcox & Co
1	Yale Lock Mig. Co. 8 Standard
	Scandinavian (Moore Bros.) Gl8 80 % J. H. McWilliams dis 10 % A. E. Dietz dis 35 %
l	" star"
1	Maileta, -dickory distorto \$ Lignumyita distorto \$
	Penfield Block Co., Lignumvitæ & Hickory dis 30 % Ment Cutters.
	Pentleid Block Co. Lignumvitae & Hickory dis 30 %
1	Perry's.Nos. 1 2 3 4 4 g'rd 5 g'rd Each,\$3.00 4.00 5.00 11.00 13.00 30.00—dis 25&5 5
1	Woodruffs (P. S. & W.)Nos. 100 150 150
١	Praw Cut. Nos. 5 2 0 8 10 10 2 5 5 Each. \$50.00 75.00 80 00 224.00 100.00 dis x 5
	American
	Enterprise
	Kieser's No. 55
	Kieser's Butener. \$40 each, dis 20 % Kieser's Butener. \$40 each, dis 20 % Silver & Deming, dis 25 %
1	Pennsylvania
1	Beef Shavers (Enterprise Mfg Co.)
	3 blades, \$18
1	Lothrop's. dls zo&to \$ Smith's, & doz, Single, \$2.25; Double, \$1. dls 33\&10 \$ Cowles How, Co. dls 55 Molneses Gaics dls zo&to \$ Stables Notices dls zo&to \$ Stables Notices
-	Stebbins Genuine dis 67% to 1 Stebbins Tinned Ends dis 40% to
1	Chase's Hard Metal. dis 20 Bush's. dis 20 Lincoln's Pattern dis 60& 10 %
1	Weed's
	Nuts and Washers(In lots less than lock to be add to lots; i lb. boxes, add to list.)
	Square Nuts. 8c off list Hexagon Nuts. 8c off list Washers 75cc off list
	Nut Crackers. Table (Humason & Beckley Mfg. Co.)dis 3314 5
	Turner & Seymour Mfg. Co
	Best
	Navy B 64c
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10101010101010101	0.5 Navy
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arm Boorinch 1/4 1/4 1/4 1/4 Per 100 feet \$2.50 3.50 4.50—dis	Sliding Shutter, Sargent's list stiding Shutter, Reading list.
D. for N. E. Hangers—Med. Large, Per 100 feet	shoves and Spades. ames. New list, July 1, 1881
R Torrey Rasor Co. dis	Groom Showel Co
Raser *trops. dis Genuine Emerson dis 33 Imitation Emerson # dos \$a.co., dis 10 Imitation #	Payne Pettebone & Son, R. R. Semington's (Lowman's Pate) Rowland's
Hunt's dis jos Chapman dis 15 68 Baunder's dis	% And the construction of
from and Tinned new list Don to 1881 dis .	a Square Frames, by case
To bulk, new list, Dec. 10, 1881 dis- Copper Rivets and Burrs dis- Nos. 7 8 0 10 11 12 13 14 15, W B. 400 500 520 540 500 580 600 550 700	Deflance Metallic
Rivet Sets	Bailey's (Stanley R. & L. Co.), I Stearns'
Barn Door, Sargent's list dis 6c&10&1	of Stearns'
Rope. dis 1. 6 inch and larger w b 16	Deuglass' Spoons. Basting Solid Table and Tes
Manila	Solid Table and Tea
Acme (Anti-Friction)	Solid Table and Tea. Britannia. Reed & Barton Holmes. Booth & Haydens. German Silver. Cast Steel, Silver Plated. Tin (F. S. & W.), Teas. Tin (Cowles Hdw Co.), case lote Songeres.
Sisal. 34 and 5-10 inch \$\psi\$ 11 Sisal. Hay Rope # 15 Sisal. Hay Rope # 15 Sisal. Hay Rope # 15 Sisal. Sisal. Hay Rope # 15 Sisal. Sis	C Tin (P. S. & W.), Tables Tin (Cowles Hdw. Co.) Tin (Cowles Hdw Co.), case lote
dia as from dia a	Try Sanare and T Revole
Stennens. Stad Irons. Sprom 460 10. Self-Heating, Tailors	Disston's Try Square and T Be Winterbottom's Try and Mitre Hocks and Dies Lightning "Screw Plate
Belf Heating, Tailors W doz \$18.00 m Gleason's Shield and Tollet dis 2 Mrs. Pott's Irons, Doubled Pointed dis 2	Lightning Serew Plate **Ione.* Hindostan No. 1, bc; Axe, 8c
Mrs. Pott's Irons Square Backdis 2 Enterprise Star Irons, new list, July 20, 1882dis 2 Combined Fluter and Sad Iron # doz \$15.00, dis 11	Sand Stone Washita Stone Washita Stone Washita Stone, Washita Stone, Signature Washita Stone, Silps. Arkunsas Stone No. 1. 4 to 6 in. Arkunsas Stone No. 1. 5 to 9 in.
Combined fluid and the	Arkansas Stone No. 1. 4 to 6 in. Arkansas Stone No. 1. 6 to 9 in. Turkey Oll Stone (Chase)4 to
Bacote & Adamson's Flint, 2, 2½ & 3. Coo ♥ ream Bacote & Adamson's Flint, Assorted. 4,75 ♥ ream Sacote & Adamson's Star. 3,75 ♥ ream	Turkey Oil Stone (Chase)
Raoder & Adamson's Emery? ream \$5.00 (11.50) Bartles Best Flint, Nos. oo 10 1%	Stove Polish, Joseph Dixon's
Bartles Best Filmt, Nos. 210 3 Pream 5.00 (at Bartles Best Filmt, Nos. 210 3 Pream 5.00 (columbia Filmt, all Nos. Pream 4.00 Pream 4	lis Gem. Gold Medal. "Mirror". Lustro. Kuby. Pletter Sun
Bartles Emery Paper # ream \$6.50 @ 11.00 / dis 30 Crocus Cioth # ream 18.00 @ 26.00 / dis 30 Crocus Cioth # ream 18.00 @	Rising Sun. Dixon's Plumbago
New England same list as B. & A. Filit. dis 30 Gage's dis 30 Gage's	Lustro. Kuby. Kising Sun. Dixon's Plumbaro. Loynton's Noon Day © gloss N. small, 8; No., medium, 84. Tinned Swedes Tacks. Tinned American Tacks. Swedes Tacks, all kinds. American Cut Tacks. Copper Tacks and Nails. Swedes Hungartan Nails.
Sass Cerd. Common. Patent. Patent. Who is compared to the common with the	Tinned Swedes Tacks
Bilver Lake, Drab Cotton	Copper Tacks and Nails Swedes Hungarian Nails Gimp and Lace Tacks
Mash 1.00ks.	Gimp and Lace Tacks, Tinned
Clark 8. dis 3355 Morris dis 5355 Morris dis 50 Broughton's Burglar Proof dis 3356 Walker's n	Dan b Tools
Hammond's Window Springs	at Brush Tacks Leathered Carpet Facks. Cigar Box Nails. Chair Nails. Double-pointed Tacks.
Bronsed. Sense," Nickel Plated. # gross \$1.00 nt Common Sense," Nickel Plated. # gross \$1.00 nt Universal dis no Sanah Welghan. dis no Solid Eyes, in soc b loss and over. # D 15(ene	Tup Borers.
Solid Eyes, in soo B lots and over	Common and Ring lves' Tap Borers Enterprise Mig. Co. Tapes, Measuring. American. Spring
Solid Eyes, In soo is lots and over. Whispens is supported by the support of the	Chesterman sre
OHVCI B	Tobacco Cutters.
Na wws. Circular, Will and Cross Cut. dis 40 Disston's Hand, Panel, Rip, &c. dis 50 Disston's Light'ning Cross Cuts, new list dis 40 Boynton's Light'ning Cross Cuts, new list dis 40 Doynton's Circular and Mill dis 40 Doynton's Ice dis 25 dis 25 dis 25 dis 26 dis 27	All Iron Nashua Lock Co.'s. Wilson's Clipper (Sargent & Co.)
Boynton's Iele Boynton's Lightning Hand, Panel and Rip. dis 25 Boynton's Lightning Hand, Panel and Rip. dis 25 Wheeler & Clemson Mrg. Co.'s Hand dis 30 W. M. & C. Mrg. Co. Cross Cuts dis 30 Livingston's Butcher and kitchen dis 20 Livingston's Butcher and kitchen dis 20	Ton Culke.
Livington's Framed Wood— Livington's Framed Wood— Nos	Winsted Tinners' Tools and Machi Machines (P. S. & W.) Tools (P. S. & W.).
Livington's Framed Wood— Nos	Transom lafters. Wollensak's Patent. Reiher Imp. Lifter, list, Oct., 188 Excelsior.
Richardson's Circular dis 40 ; Richardson's Miti and X Cut. dis 40 ; Richardson's Miti and X Cut. Butcher and Web	Game. Newhouse
Ponce Band Saws, all Widths	Excelsior: Traps. Game. Newhouse Game. Oncida Pattern. Game. Hiske's Patent Mouse. Wood. Choker Mouse. Round Wire. Mouse. Catch-em-alive. Mouse. Toncolor Bonanas " Mouse. D-iusioa Rat. "Decov".
Same ton's Patent V Cut. per dog \$12.00: Hand Saw	Mouse. Catch-em-alive
per dos, \$10.00. dis 25, 7 gr liman's lenuine	Lothrops' Brick and Plastering.
each's	Pence's Plastering
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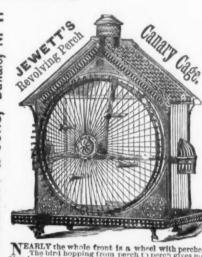
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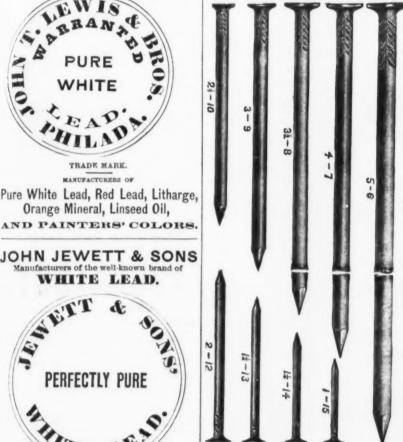
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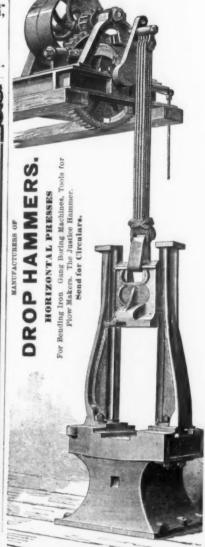
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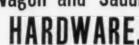
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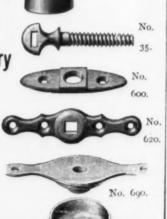


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SPECIAL NOTICE TO THE HARDWARE TRADE.

When we published our Circular to the Trade in August last, in reference to the Kempshall Gravity Sash Lock, no patent had been issued to the Kempshall Company. But to our surprise the Patent Office last month granted them a patent, under which they are claiming the right to make their Fasteners.

The application for this patent was made by one William E. Sparks, and we ask the Trade to note that the Patent Office in acting upon it, wrote an official letter, on the 18th of last July, rejecting it on one Mr. Morris' patent of 1879, and saying:

last July, rejecting it on one Mr. Morris patent of 1879, and saying:

"Morris, 22,487, Feb. 18, 1879, shown a Sash Lock which in every

"respect is equivalent to that shown and described in this (Sparks')

"application. It is considered a matter of no consequence that the

"latch engages with the notch in the bottom plate instead of a top plate, " and it is held to be immaterial whether the locking notches are above

44 or below the latch."

As the Patent Office in July thought the Kempshall Fastener the equivalent "in every respect," as they say, of the Morris Fastener, it will not be wondered at that we were surprised they should in September grant a patent for it.

We have determined to test the right of this Sparks-Kempshall patent to continue in existence, and we have therefore this week brought another suit against the Kempshall Company, under Section 4918 of the United States Revised Statutes, to have the patent declared void by the court, as being for substantially the same thing as our Mr. Morris' prior patent.

prior patent.

The Trade therefore will please take notice, and are respectfully requested to await the result of the litigation before being influenced by the Kempshall patent.

Cincinnati, November 1, 1833.

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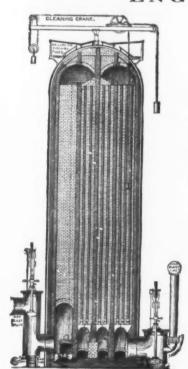


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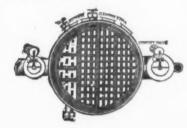


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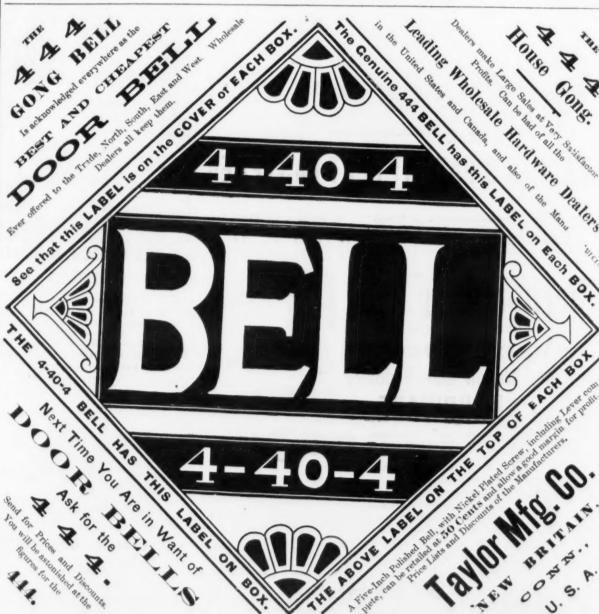
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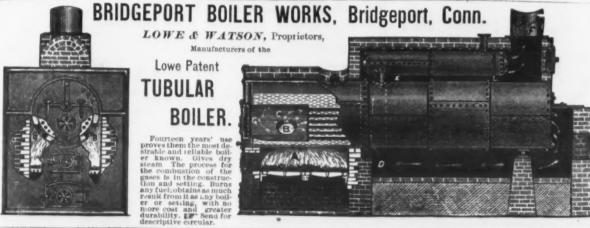
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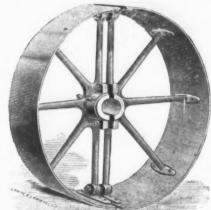
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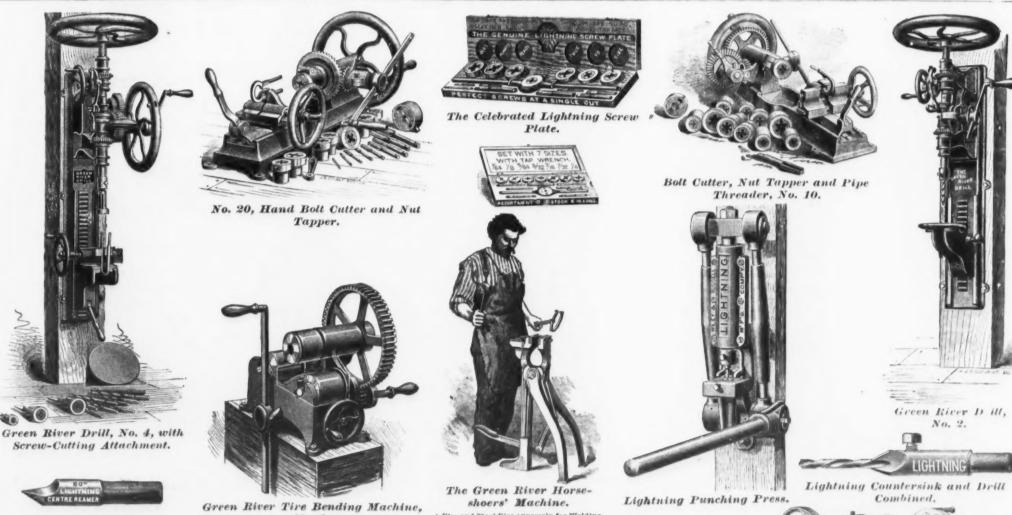
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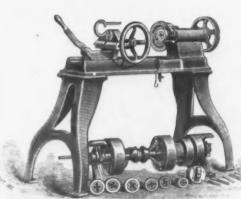
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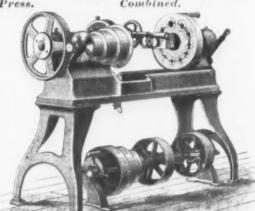
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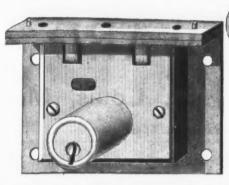
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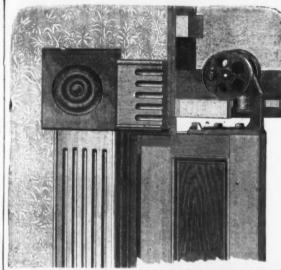
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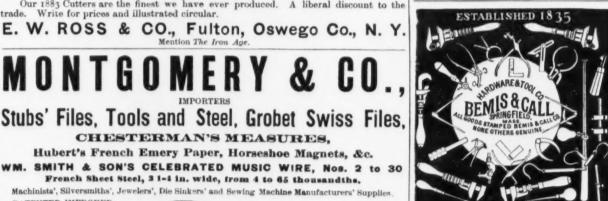


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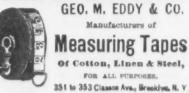


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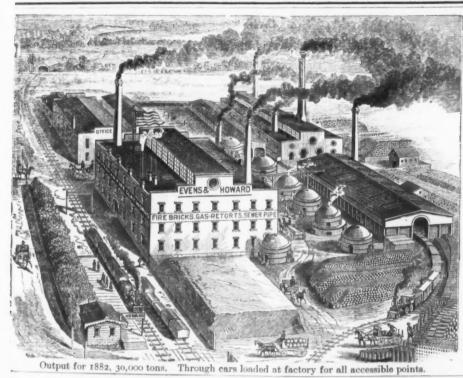
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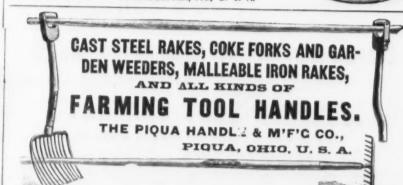
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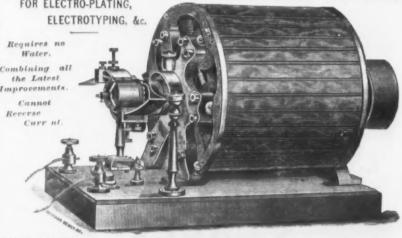
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Quincy John W. & Co., 98 William, N. Y. 4 on Commission Merchants. Groome, Roberts & Co., Philadelphia, Pa.	The Alford & Berkele Co., 77 Chambers, N. Y.,38 Hall. Elton & Co., 47 E. 13th. N. Y	Hart Mig. Co., Cleveland, O., Wiley & Russell Mig. Co., Greenfield, Mass Stoves and Ranges. Michigan Stove Co., Detroit, Mich
on Commission Merchaus. groome, Robert's & Co., Philadelphia, Pa	Obermayer S. & Co., Cincinnati O	Stove Trucks.—Metzner W. C., Chicago, Ill Stove Trucks. Tucker Alarm Till Co., Indianapolis, Ind
Lundberg Gustaf, Boston, Mass	Plumb Bobs. 50 Vajen & New, Indianapolis, Ind. 53 Plumbers' Materials. Manufacturers of. 53 Sverbart Jas. M., Scranton, Pa. 60	Yaie Caster Co., New Haven, Conn
wister L. & R. & Co., Philadelphia, Pa. 5 on Desicre. 5 on Desic	Power Hammers. Dieneit & Eisenhardt. Philadelphia, Pa	Packs.—American Tack Co., Fairbaven, Mass. Cobb & Drew, Plymouth, Mass.
Borden & Lovell, 70 and 71 West, N. Y Carmichael & Emmens, 130 and 132 Cedar N. Y Cooney Daniel F., 88 Washington, N. Y	Beecher & Peek, New Haven, Conn	Phillips E. & Sons, South Hanover, Mass Taps and Dies. Carenter I. M. Pawtneket, R. V.
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Richardson, J. O., Philadelphia. Ross. James W., Chicago, Il. Williamson James & Co., 50 Wall N. Y. 4. On. Sheet, Manufacturers of, Lersey City, Salvanising Co., Jersoy City, N. J.	Pierce Geo. N. & Co., Buffalo, N. Y44	Tubes, Senmiess. Charles H. Beslev & Co., Chicago, Ill. Tubes, Senmiess Drawn Copper, Bridgewater fron Co., Bridgewater, Mass. Turning (Wood), Ripley Mr. Co., Unionville, Conn.
lersey City Galvanizing Co., Jersey City, N. J 4 Lefferts, Marshall & Co., os Beekman, N. Y 4 Wood W. D. & Co., Pittaburgh, Pa	Blake & Johnson, Waterbury, Conn. 3 Clark & Cowles, Plativitle, Conn. 33 Grundy & Discoway, or Greenwich, N. Y. 12 Old Colony Rivet Co. Kingston, Mass. 2 Townsend W. P. & Co. Pittsburgh, Pa. 57	Illinois Iron and Bolt Co. Carpentersville III
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nwn Mowers. Chadhorne & Coldwell Mfg. Co., Newburg, N. Y50 Sance Zers. tipley Mfg. Co., Unionville, Conn	Now T., 39 Ohn st. N. Y. Now T., 39 Ohn st. N. Y. Northrop A. & Co. Pittsburgh, Pa. 41 Snyder T. C. & Co., Canton, O. 8 Raica, Manufacturers of Stanley Rule and Level Co., 29 Chambers, N. Y. 9	Howard Iron Works, Bullalo, N. Y. Prentiss Viae Co., 23 Dey, N. Y. Reno Bench V se Co., Detroit, Mich. Stephens Patent Vise, 41 Dey, N. Y. Wardrobe Hooks.
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7	Shutters, Revolving Steel.
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	Cowing Steel Casting Co., Cleveland, O
7	Kilbourne & Jacobs Mfg. Co., Columbus, O
3	Milton Sieve Co., Limited, Milton Pa
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51	Macomber, Pigel w & Dowse, Boston, Mass
8 7	Skrites, Ice. Barney & Berry, Springfield, Mass. Barney & Berry, Springfield, Mass. Dame, Stoddard & Kendall, Boston, Mass. Barney & Boston, Mass. Barney & Boston, Mass. 44 Size, H. F., to Chambers, N. Y. Sutton Wm. A. 222to 250 West 30th, N. Y.
11 21	Skates Roller
16	Hentey M. C., Richmond, Ind. 48 Kitselman Bros., Ridgeville, Ind. 49
4	Smelting Works.
7	Martin Reynolds, Brooklyn, N. Y
57	Mpelter.
,	Manning & Squier, 114 Liberty, N. Y.
45	Millers Falls Co. 20 Chambers N. V.
52	Sporting Goods, Kittredge B. & Co., Cincinnati, O.
	Tuck Mfz. Co., Brockton, Mass
56	Spring Hinges. Barker Hardware Co., Cinelmati, O., 12 Union Mrg. Co., 90 Chambers st., N. Y., 12 Van Wagoner & Williams Co., 82 Beekman, N. Y., 10
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38	Dean Framps. &c.c., Manufacturers of, Dean Bros. Steam Pump Works, Indianapolis, Ind. McGowan John H. & Co., Cincinnati, O.,
. 0	Watson & McDaniel Philadelphia De
17	Steel importers.
. 6	Carr J. & Riley 30 Gold, N. Y
42	Montgomery & Co., 105 Fulton, N. Y
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. 0	Butter (Musher's Special.) Hubbard Chas., 50 Cliff, N. Y Jones B. M. & Co., 11 and 13 Oliver, Boston, Mass., 53
-44	Jones B. M. & Co., 11 and 13 Oliver, Boston, Mass 32
	Albany & Rensselaer from & Steel Co., Troy, N. Y 54 Anderson, Du Puy & Co., Pittsburgh, Pa.
13	Burrows Thos. C., 99-101 John, N. Y
. 4	Cleveland Crucible Steel Co., Cleveland, O
52	Steel Hanufacturers. Albany & Rensselaer Iron & Steel Co., Troy, N. Y., 93 Anderson, Du Puy & Co., Pittsburgh, Pa. 4 Burrows Thos. C., 99-101 John, N. Y. Chrome Steel Works, Brooklyn, N. Y. Chrome Steel Works, Brooklyn, N. Y. Cleveland Crucible Steel Co., Cleveland, O. 5 Cleveland Rolling Mill Co., Cleveland, O. 5 Co-operative Iron and Steel Works, Banville, Pa. 6 Gautler Steel Department of Cambria Iron Ce. Johnstown, Pa
4	Jessop, Wm. & Sons, Sheffield, Eng., 91 John, N. Y. 62 Midvale Steel Co., Nicetown, Phila., Pa
5	Miller, Metcalf & Parkin, Pittsburgh Moss F. W., 80 John, N. Y
35	Johnstown, Pa. Jossop, Wm. & Sons, Sheffield, Eng., 9; John, N. Y 52 Midvale Steel Co., Nicetown, Phila, Pa. 0833 Miller, Metcalf & Parkin, Pittsburgh 53 Moss F. W., & John, N. Y Naylor & Co., 99 John, N. Y Pennsylvania Steel Co., 28 S. 4th, Phila Philadelphia Steel Forge, Philadelphia, Pa. Rowland Wm. & Harvey, Frankford, Phila, 65 Shoenberger & Co., Pittsburgh, Pa.
. 19	Philadelphia Steel Forge, Philadelphia, Pa. Rowland Wm. & Harvey, Frankford, Phila. Shoenberger & Co., Pittsburgh, Pa. Smita, Sutton & Co., Pittsburgh, Pa. Singer, Nimick & Co., Pittsburgh, Pa. Spencer Matthias & Son, Sheffield, England. Standard Steel Works, Philadelphia, Pn. Standard Steel Works, Philadelphia, Pn.
57	Smith, Sutton & Co., Pittsburgh, Pa.
. 6	Spencer Matthias & Son, Sheffield, England.
49	Standard Steel Works, Philadelphia, Pa. Temple & Lockwood, 12 Platt, N Y 52 The Bolton Steel Co., Canton, O., 51 Vought & Williams, 288 Greenwich, N, Y 51 Wardlow S, & C., Sheffield, England 52
17	Vought & Williams, 288 Greenwich, N. Y
	Cary & Moen, 234 W. 29th, N. Y.
13	Chatillon John & Sons, 91 and 53 Cliff, N. Y
. 5	Steel, Tool.—Brown & Co., Pittsburgh, Pa., 35 Jessop, Wm. & Sons, Sheffield, Eng., 91 John, N. Y. (2) Temple & Lockwood, 12 Platt, N. Y
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40	Stoves and Ranges. Michigan Stove Co., Detroit, Mich
50	Stove Mengira, -Metzner W. C., Chicago III s
53	Stove Trucks. Tucker Alarm Till Co., Indianapolis, Ind 20 Yaie Caster Co., New Haven, Conn
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58	Mestes American Tools Co Patetones M.
54	Cobb & Drew, Plymouth, Mass. 12 Florence Tack Co., Florence, Mass. 33 Grundy & Disosway, 105 Greenwich, N. Y 12 Phillips & Sons, South Approver
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36	Taps and Dies. Carpenter J. M., Fawtucket. R. L
00	Wiley & Russell Mfg. Co., Greenfield, Mass 43
12	Taps and Reamers. Redfield J. E., Essex, Conn
7	Purvis R. C., Philadelphia, Pa52
43	Testing Machines. Olsen Tinius & Co., Philadelphia, Pa
6 7	Little Giant Mfg. Co., Milliport, N. V.
7	Tools, Garden. Dunlap C. W. & Co., 85 Chambers, N. Y
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	Tube Scrapers. Chalmers Spence Co., 23 John, N. Y
20	Runner & Duun, Philadeiphia, Pa
20	Charles H. Berley & Co. Chicago III
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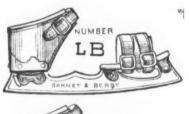
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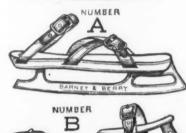


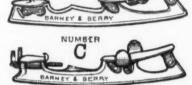
















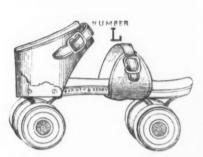


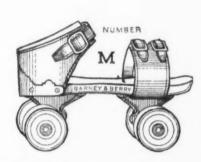












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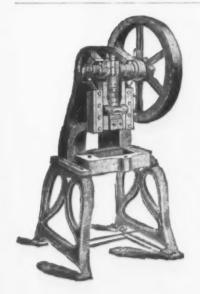
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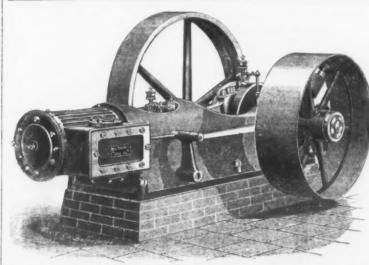
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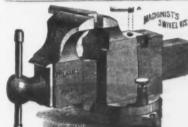
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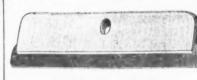
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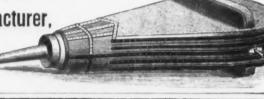
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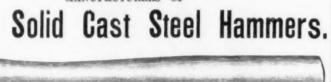
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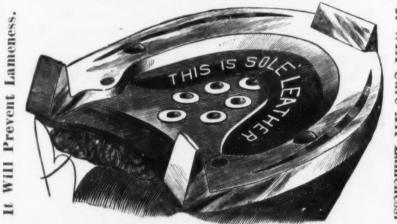
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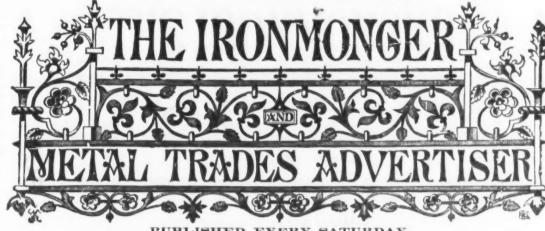
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so far as our experience of more than twenty years is concerned, will be covered by The Foreign Supplement at least twice a year. Thus a Price List of Advertisement inserted in the Ironnonger and Foreign Supplement is a strikingly powerful and most efficient way of publicity, not to be compared with any of the other ordinary channels of communication.



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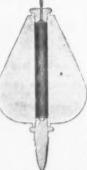
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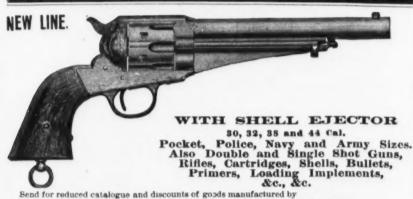
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is superior to the old method of using but one piece, for when that breaks the whole scraper ied, while ours is so constructed that we can replace any part at a trifling expense. We make three to meet the wants of all classes of Earth Workers. Especially suited for t ontractors and Town-Road Work. Send for circulars. Manufactured by THE CHAMPION SCRAPER CO., Troy, Ohio.

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s to interfere; no Straps to tear off. in their manufacture, and fully warrant every quality; Straps finish superior style; superior to catch; no Style to the transfer to the tran Entirely new sty
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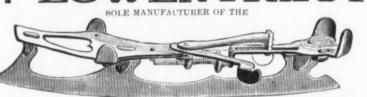
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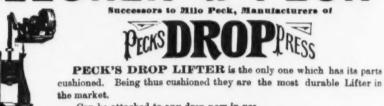
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December of	
PHILADELPHIA.	Round Head Brass, new list Dec. 2 Round Head Iron, new list Dec. 2
Corrected Weekly by Lloyd, Supplee & Walton.) [crms, 30 days. For 50 or 30 days, interest added at 10%]	Round Head Iron, new list Dec. 2 **Speens.** Plated.** German Sliver.** Britannia, Boardman's.** Tinned.** Springs.**—Torrev.* Gem No. 3 small Jap'd.** Coll of medium Jap'd.** Other Standard Spring.** Warner Door Springs, per dos. ne Standard Spring Hinges.** Single No. 0, per dos. net.** No. 1.** Other Standard Spring Hinges.** No. 1.** Other Standard Spring Hinges.**
	Parker's
peter Wrights. F B 11 611/40 Over 200 lbs. 11/40 Trenton 10/6 Eagle Anvils, American, 100 dis 20 3	Gem No. 3 small Jap'd
Apple Parers. Apple Apple Pearers. Globe Apple Pearers. Fenn Apple Parers Lots of 10 to 25 dozen special prices	Warner Door Springs, per dos. ne Standard Spring Hinges— Single No. 2, per dos net
Lots of to to 25 dozen special prices	No. 1. Other Standard Spring Hinges
#8.50 @ 9.00 Hunt's Kentucky and Yankee,per dos #8.50 @ 9.00 Robert Mann.	No. 1. Other Standard Spring Hinges. Stocks and Dies. Stove Pollsh.—Gem. Dixon. Fire Fly.
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Batter Nut Augers. dis 4,000 % Batter Stugers. dis 4,000 % Watrout Ship Augers. dis 1 % Renjamin Pierce Auger Bits. dis 4,000 % Renjamin Pierce Auger Bits. dis 4,000 % Griswold Auger Bits. dis 4,000 % Cook 3 dis 4,000 % Jenilings Hat. Hol. Augers, list \$45 \$ dos. dis 2,000 % Rearus Pat. Hol. Augers, list \$45 \$ dos. dis 2,000 % Rearus Pat. Hol. Augers, list \$45 \$ dos. dis 2,000 %	Traps. Genuine Oneida—Newhouse Im. Oneida—Newhouse list. first
Griswold Auger Bits. dis 5,605 % Cook's dis 10,10810 % Lonnings' dis 10,10810 %	Vises.—Solid Box Trenton new lis Wrenches.—Agricultural. Coes' Genuine. Coes' Mechanics'.
Bonney's Pat. Hol. Augers, list \$45 \(\pi\) dos. dis 20210% Stearns' Pat. Hol. Augers, list \$45 \(\pi\) dos. dis 20210% Balances. Light and Common	water and the state of the stat
Bells. Bevin Bros. Mfg. Co. Light Hand Bellsdis 70&10 %	Wire, Bright or Ann'd, Ng. o to 18 No. 19 to 26 No. 19 to 26 No. 27 30 Coppered, e to 18 Tinned Broom Wire Galvanized Barb Wire Painted Barb Wire. Galvanized Ng. 7 to 18 Market Wringers.
Bells. Bevin Bros. Mfg. Co. Light Hand Bells. dis yok 10 % Swiss Pattern Hand Bells. 00 % Comell's Door Bells. dis 16&10 Gt. Western & Kentucky Cow new list. dis 60	Tinned Broom Wire Galvanized Barb Wire Painted Barb Wire
Borins Machines Upright, without AugersList 5.50 dis 15@50 % Angular, without Augers	
Berins Machines Upright, without Augers. List 5.50 dis 45@ 50 f. Angular, without Augers. " 6.75 dis 86% 50 f. Selfs.—Eastern Carriage Bolts. dis 86% 50 f. Philadelphia " new list dis 70% 10 f. Stanley, Wrought Shutter. dis 50% 10 f.	Universal No. 216
	Vo. 2 Universal No. 2 No. 2 No. 2 No. 2 No. 2 No. 3 Excelsior E, for stationary tubs,
American Ball	In lots of 1 doz. \$6.00 doz. dis. from
Cast Loose Joint, Narrow dis 60&10 % Broad dis 60&10 % Acorn. Loose Pin dis 60&10 %	PITTSBUR Merchant Iren TERMS.—Note or acceptance at 60
American Ball Butts.—Cast Fast Joint. Narrow	TERMS.—Note or acceptance at 60 rate of exchange on New York, or cent. for cash, if remitted within 10 invoice.
Table Hinges and Dack Flaps. dis cocto to Narrow. Fast	For fluctuations and on card rates see we
	burgh Trade Report.
Bacobarton Alia 70	136 to 4 by 36 to 1 tnch
Chains.—German Halter and Coll. list December 31 1881. dis 50@55 % Galvanized Pump. b 9%c net	134 and 136 by 36 to 34" 1 and 136 by 36 to 34" 36, 34 and 36 by 36 to 36 Inch.
Chains German Nation and Coll. int December 31 1881.	# # # # # # # # # # # # # # # # # # #
Butcher's	The f. Howing are card rates.
Casters.—Bed (new list July 1, 1880,)dis 44@50 % Plate	74 to 114 Oval Iron.
Enterprise dis 20010 \$\frac{1}{2}\$ Cattery.—Walden Pocket new list net Penna Knife Co. new list net	Half Oval and Half R
Casters.—Bed (new list July 1, 1850.)	% to 136 by 5-16 to 36 inch
O O-me	" " 11 and 12
Fy Pans.	" 13 and 14
Burnished	134 to 334 by 34 and 5-15 " 1 to 134 by 34 and 5-15 " 1 to 134 by 34 and 5-16 "
Files. Nicholson dis 40 % Dission dis 40 % Butcher Huting Machines.	% and % by % and 5-16 *
Finting Machines. Eaglo-3/5/10. rolleach, \$2.15 \ dis 35 \ 2.85 \ dis 35 \	1% to 5 by Nos. 11 and 12. 1 to 1% by ½ to 3-16. 1 to 1% by Nos. 11 and 12.
	% and 13-16 by Nos. 11 and 12 % and 11-16 by % to 3-16 % and 11-16 by Nos. 11 and 12
Geneva Fluter & Sad Iron \$\psi\$ dos \$10.50 net flammers. Verkes & Plumb's, new list dis 20 \$	% and 9-16 by 16 to 3 16
Yerkes & Plumb's, new list	## 10 136 by 5-16 to 54 linch. ## 16 136 by 5-16 to 54 linch. ## 17 linch. ## 18 li
Handles. Disston Loop Handles Crosscut	1)4 to 2, No. 19. 1)4 to 2, No. 20. 1)4 to 2, No. 21.
Verkes & Plumb, new list	134 to 2, No. 22 15-15 I, and 136. Nos. 13,14 and 15 15-16, I. and 136, Nos. 16, 17 and 18
Huges. 8trap and T	15-16. 1, and 136. No. 21
"Pol'ed and P't'd & Blued & P't'd31 28 26 25 24 23 dis 30&10% (Clinton) 23 21 20 19 18 dis 30&10%	34. Nos. 16, 17 and 18
" Pol'ted and P't'd 28 35 25 24 23 dis 30&10% (linton 23 21 20 19 18 dis 30&10% (linton 23 21 20 19 18 dis 30&10% (linton 25 22 21 20 19 18 dis 20&10% (Saranac 25 23 21 20 19 18 dis 25 % Hay and Straw Kulves Lightning per dos, net \$18.00 Electric 18.00	76. NOS. 13. 14 and 15
Wadsworth " 10.50	"13-16, NO 21 13-16, NO. 22 M, NOS. 13, 14 and 15
Waiton Straw Kulves. 17.00	4, Nos. 10, 17 and 18 4, Nos. 19 and 20
American Padlocks dis 30, 1082 \$ cash scandinavian Padlocks dis 50 \$ \$ \$ dos. \$ \$ co. \$ 6.50 \$ 7.50 \$ \$ co. 10.50 \$ 12.50 \$ dis 50 \$ \$ \$ \$ dos. \$ \$ 50 \$ 6.5	11-10, Nos. 13, 14 and 15
₩ dos	11-16, No. 21. 11-16, No. 22. 56, Nos. 13, 14 and 15.
Lanterns- Euckeye Large list net; smail list net Tubular No. c. \$7.50; No. 1, \$9.00 \$\pi\$ don net Guards, 40cents extra.	96, NOS. 10, 17 and 16 96, NOS. 29 and 20 96, NO. 21
Guards, socents extra. Laws Mowers. Pennsylvania new list Philadelphia dis 30 5 Excelsior. Laws and Gardes Pumps. Holland Patent. List \$4.00 dis 10 3	9-16, Nos. 13. 14 and 15
Long and Short Cutternew list	9-16, Nos. 19 and 20 9-16, No. 21 9-16, No. 22
Pennsylvania Pattern	6 inch, Nos. 13, 14 and 15
Enterprise Bik CU s anosatring saucres, dit socito steebins Gates	No. 21. No. 22. No. 22. No. 32. The prices under Hoop Iron do no
Cork Lined "	The prices that it hop tron do he files. 1-10c per ib. extra will be charge lighter than the lightest indicated. 1-10c per lb. extra will be charged
Core Lane Core Lane Core Lane Core Lane Core Lane Dixon's.	to specined lengths.
Stuffers dis 24&c %	Barret Hoops. 14 to 2 lin. cut to len 5 libs. and less than 9 libs. per set of 5 hoops. Less than libs. per set of 6 hoops. Extras for Cutting to Length all All Iron, including Tre. Tunk Iron.
Okonts	Extras for Cutting to Length all All Iron, including Tire
Fine Froms.— dis 2c#10 \$ Ruccher's	Plow Slabs
"Non-Adjustable	Common. Ch
Razer Streps Lamont Combination Der los. \$4.00	No. 15 to 17
Btanley Vory dis ccs	No. 28
Lhs	not less than 2.100 extra. Wood's Patent Pianished 1st quality (A)
Steel and Iron disco: Full case discourage for carb	Nos. 14 to 20
Dission's Try Squaresdis 40 %	45 @ 47% & discount. Coal Screen Iron. 1% by % by 5-163.oc 1 by % b Angle Iron.
*Cythes. Golden Clipper, Damascus Blade, Boxed and Sharpened. Blade, Boxed and Sharpened. Blade, Boxed and Sharpened. Work Boxed and Sharpened.	1% by % by 6-163.cc 1 by % b 216, 3, 316 and 1 inch
bisston's Hand, Panel and Ripdia 20 % Disston's Circulardis 40 % Cross-Cut No. 2, Plain Toothdis 40 %	136 by 1 in 3h, for Plow Handles
Saws.—Disston's Hand, Fanci and Rip. dis 20 % Disston's Circular. dis 40 % Cross-Cut No. 2, Plain Tooth. dis 40 % Patent Tooth. dis 40 % Champion Tooth. dis 40 % Boynton's Lighting Cross Cut, new list. dis 40 % Lighting Buck Saws, cross bar. dis 40 %	8 lbs. to the yard 2.9c 20 lbs. to
Shovels and Spades. Oliver Ames & Sons. new listdis 15 %	Bplice Joints for 12, 16 and 20-lb. and 30 lb. Hall. 50. 83ch; 40 lb., 60c e
Shevels and Spades. dis 15	2% and 3 by % " 12 and 16-1 2% by 5-16 " 8-lb. Rail. Flat Rails.—Punched and Co.
*tone.	13 "
Washita Extra	Innista Nall Rods
" Ave Stone " 8c dis 40 % Slipe " roc)	Norway Guard Iron %x %x % had %x % x % &x %x %x 0 and %x %x % \$x %x 0 and %x %x %x % Dropper Bars Dropper Bars Oylinder and Landside Iron Plow Beam Iron
Flat Head Iron, new list Dec. 27	Cylinder and Landside Iron Plow Beam Iron

T	THE IRON .
Round Head Brass, new list Dec. 27dis. 45 % Bound Head Iron, new list Dec. 27dis. 50 %	NAILs.
Round Head Iron, new list Dec. 27 dis. 5, 5	Best Quality Refined Cast S Square, Flat. Octagon and Rou
Britannia, Boardman's dis 60 % Parker's, dis 60&10 % Tinned dis 10 %	% to 2 inches, inclusive
Springs Torrev	7-32 and 454 to 5 3-16 and 554 to 6 3-16 and 554 to 6
Coll No. 'o. per gross net	3-10 and 55% to 5 5-32 inch. 56 inch. Oil Well Steel Forgings. Machinery Steel.
Standard Spring Hinges— Single No. o, per dos. net	Ordinary Sizes % to 2 inch
Single No. 1, per dol. net 1.25	Round : (1/60 1/100
Fire Fly 8.300 gross net Tacks dis 30&10 to 8	7-32 inch
3½-8, and under oc	Cut to specified lengths, 14c extra.
Genuine Oneida—Newhouse	Hammer Cast Steel, Crucible Cast Steel. Open Hearth Cast Steel. Sheet Steel.—Crucible.
Wrone-see, -Agricultursi. dis 56 Wrone-see, -Agricultursi. dis 70 Coes' Genuine. dis .083 5 Coes' Mechanics'. dis .084083 5 Wire. dis .084083 5 Wire.	Best. ad Qual. ad Qual. (
Wire. Mail. Bar	To 21 gauge
Wire. Bright or Ann'd, No. c to 18 dis 62\s\circ\circ\circ\circ\circ\circ\circ\ci	Auger and Auger Bit. Axie Steel for carriages and wagons. Axie Steel for carriages and wagons. Frog Points and Places Side Bars. Pick, plain (hammered). and Mattock, beveled (rolled). Skate Steel.
Painted Bar b Wire	Side Bars. Pick, plain (hammered).
Wringers, Peerless No.214	Skate Steel
Universal No. 24 42.00 Novelty No. 2. for common tubs. 42.00	Table Cutiery. piain. Table Cutiery. beveled Pike and Cant Hook. Coa and Granite Wedge Roller.
Gatvanized No. 7 to 18 Market List, dis 47%60 o & Wringers. Perriess No. 24	Spindle, subject to Machinery classificat Trap Spring Steel Forged Crank Pins and Lathe Spindles Piston Rods, plain
	Piston Rods, plain forged to shapes Bilde Bars, plain forsed to shapes
PITTSBURGH. Merchant Iren.	Roller, Fire, Boy and Flue Sheets and Island
Merchant Iron. TERMS.—Note or acceptance at 60 days, with current rate of exchange on New York, or a discount of 2 per cent. for cash, if remitted within 10 days from date of invoice.	thick. Boiler, Fire-Box and Flue Sheets, not let thick. Circulars and semi-circulars, when ordered
For fluctuations and discounts on card rates see weekly Pitts-	Smoke Stack, to shape
burgh Trade Report.	Square. Round, Half Round and Flat inch and over. Mill Saw. 8-Inch and over. Taper, 34-Inch and over.
16 to 4 by \$6 to 1	mili Saw. 8-inch and over. Taper, 3½-inch and over. Horse and Shoe Rasp.
134 and 136 by 36 to 34 2.0c 1 and 136 by 36 to 34 2.7c 56. 34 and 34 by 36 to 54 inch	Spira Spring Cast Steel
1 to 134	Thre Cast Steel.
2% to 3% 3.6 3.6 3.10 3% to 4 3.50 5.16 3.30 4% to 5 4.00 % 3.50	Thre Cast Steel. 133-10. [483-10 and M. 1 and 1-105M and 6-32. M(33-10 and 6-32. M and M(34) and 3-32 and 12 g. Solid Sate Cast Steel. Agricultural Implement Cast Si Fork and Bake, Crucible.
74 to 74. 2.0c 3.16. 5.5c Oval Iron. 5.5c 24 to 114 2.9c 26. 3.3c	Three and Five Ply Cast Steel Agricultural Implement Cast Si Fork and Rake, Crucibie
Half Oval and Half Round. [4 to 14 inch	Horse Rake Steel, cut to lengths, Crucible Hoe. Crucible. Corn Stalk Cutter, beveled. Beveled Hoe and Shovel Steel in Bars. Crucible Play Steel to a Bars.
% to 1)4 by 5-16 to 74 Inch	Bessemer and Open Hearth.
76 Inch. Nos. 13 and 14	Spring. " spiral and taper, cut to lengths. Tire.: -to thick and above. Toe Calk.
Oval from 3-30 3-	Piow Axle Billets
3/4 to 6 by 1/4 and 5-16 inch	Axle Billets. Sleizh Shoe Cutter Shoe cut to lengths and tapered. Scythe Back Steel. Grain Drill Bars. Points.
1 to 196 by 16 and 5-10 2.8c 14 to 18 by 16 and 5-16 5 5.0c 15 and 16 by 16 and 5-16 5 5.0c	Points
154 to 6 by 16 to 3-16	Thrasher Steel. Teeth. Rolled Hammer Billets Terms.—Four months: 3 per cent. disco
to 1% by Nos. 11 and 12. 3.20 34 and 13-10 by 14 to 3-10. 3.40 34 and 13-16 by Nos. 11 and 12. 3.40	if remitted within 30 days. Rells and Castings. Furnace Floor and Straightening Places.
\$\\ \and 11-16 by \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	Housings and Castings not otherwise spe Quide Plates. Spindles and coupling boxes. Sand kolls and Pinions, large size. Pipe Mill Castings. Boiling Mill Castings under so the
% and 0-10 by Nos. 11and 12 4.10 % inch by % and 3-16 4.20 % inch by Nos 3-1 and 12 4.40	Sand Rolls and Pinions, large size Small size Pine Mill Castings.
134 to 4, Nos. 13, 14 and 15	Rolling Mill Castings under so lbs
13 to 2, No. 20	Pulleys up to 30 inches. over 30 inches. Engine Castings light. heav
15-15 1, and 156. Nos. 13, 14 and 15	6 to in diam., to 20 in long
15-16. 1, and 1½, No. 21 3,60 15-16, 1, and 1½, No. 22 3,90 ½, Nos. 13, 14 and 15 3,70	25 to 24 in. "IX to 72 in. " 14 to 31 in. 72 to 106 in. After Oct. 1, 1681, no discounts will be tlement as heretofore, prices quoted bein
74. Nos. 16, 17 and 18	White and Red Lead.
13-16 Nos. 13, 14 and 15	Strictly Pure White Lead in Oil. in kegs B Tin Pails, 14c. Who over keg price Palls, 1c Who over keg price; assorted,
"13-16, NO 21 4.20 13-16, NO 22 4.20 13-16, NO 22 4.30 M. NOS. 12, 14 and 25 4.30	gc. per m ever keg price. Dry White Lesd in barrels
\$\frac{1}{2}\$, Nos. 16, 17 and 18 4.10 \$\frac{1}{2}\$, Nos. 19 and 20 4.20 \$\frac{1}{2}\$\$, No. 21 5.30	Freights equalised with all points w Lead is made. Terms: Note at sixty days, or if paid w
%, NO. 22. 4.40 11-10, NOS. 13, 14 and 15	Terms: Note at sixty days, or if paid w from date of invoice a discount of 2)4 p be allowed, but not otherwise. Window Class.
11-16, NO. 21 4-10 11-16, NO. 22 4-00	Discount, 60 % on Single Strength, 60 % 6
96, Nos. 16, 17 and 18 4-50 96, Nos. 19 and 20 4-50 96, Nos. 19 and 20 4-50	8ize, AA. A
56. No. 22. 4.6c 96. No. 23. 4.9c 0-16, Nos. 13, 14 and 15. 4.6c	5 x 8 to 10 x 15
9-10, Nos. 19 and 20	11 X 14 to 16 X 24. 9, 9, 18 18 X 22 to 20 X 30. 10.75 9,71 18 X 22 to 20 X 30. 10.75 9,7 16 X 36 to 24 X 30. 12.25 10.77 26 X 38 to 24 X 36. 13.00 11.5 26 X 36 to 26
	76 x 46 to 30 x 50
Nos. 19 and 20	70 X 40 10 30 X 50 15,00 14,00 14,00 15,00 X 51 10,00 14,00 10,00 14,00 10,00 14,00 10,00 14,00 10,00 14,00 10,00 14,00 10,00 14,00 10,00 14,0
The prices under Hoop Iron do not apply to Cotton Ties.	6 x 8 to 10 x 15
1-10c per lb. extra will be charged for cutting floops	25 X 30 tO 20 X 44 23.25 21.20
to specified lengths. Barrel Hoops. 134 to 2 in., cut to length.	90 X 50 to 34 X 96
134 to 11 lbs, per set of 6 hoops	
	An additional to per cent. will be ch glass more than 40 Inches wide. All sis inches in length and not making more th inches, will be charged in the 84 united inc
Plow Slabs	Hubbard, Bakewell & Co.'s
	Axes, Single Bit, Lippincott
No. 18 to 17. 3-80 5-3c 6.8c No. 18 to 21. 4.10 5-5c 7.5c No. 18 to 24. 4.30 5-80 7.3c No. 28 to 24. 4.30 5-80 7.3c No. 27. 4.70 6.0c 7.5c No. 27. 4.70 6.0c 7.7c No. 27. 4.7c 8.5c No. 28. 4.8c No. 28. 6.0c No. 28.	Drain Tools, list
No. 27	Hoes, Planters' Scovill Pattern Handles, Cross Cut. Shovel, Bent, Bored, Riveted.
Wood's Patent Planished Sheet, 1st quality (A)1056 2d quality (B)9 c Galvanized C. H. B.—(Charcoal Hammered Blooms	Long. Cross Cut. H. B. & Co., Champion.
st quality (A). 10%c 2d quality (B). 9 c	Cross Cut, Lippincott, Champion.
1% by % by 6-16 3.00 1 by % by 5-16 3.50	Shovels, list
214, 3, 314 and 1 inch	THE
2\(\frac{1}{6}\), 3\(\frac{1}{6}\) and \(\frac{1}{2}\) inch	Entirely new, being stamped from
1% by %	one plate of steel and superior to cast-iron sinks in every particular
8 lbs. to the yard2.9c 20 lbs. to the yard2.8c 13	being lighter, stronger and more durable.
13	These sinks, being made of wrought steel, will not break from
2½ by 516 Flat Rails.—Punched and Countersunk. 1½ to 2 by ½ to ½ inch	heat, cold, or any cause whatever.
1½ to 2 by ½ to ½ inch	We furnish these sinks painted or galvanized, as desired, at prices —freedom from breakage consid-

T	HE IRON AGE	1
**	Walls. See Pittsburgh Trade Report. Best Quality Hefined Cast Steel.	
×	Square. Flat. Octagon and Round.	
*	Best Quality Refined Cast Steel Square, Flat. Octagon and Round.	
24 24	% and 3% to 4	
8	3-16 and 536 to 6 4	
00	% inch 300 Oil Well Steel Forgings. 200	
5 75	Machinery Steel.	
25	Ordinary Sizes % to a health Crucible. Bessemer & Open Hearth	
90 %	Ordinary Sizes % to 2 inch	
%	Found 21st to 3 inches 61sc 51sc	
75	7-32 Inch 7560 6160	
30	de l	
%	Square, Fiat and Octagon, 1/2 extra throughout the list.	
%	Cut to specified lengths, 1/4c extra. Hammer Cast Steel.	
8		
16	Open Hearth Cast Steel. 50 Sheet Steel.—Crucible. Bessemer & Best, 2d Qual, 3d Qual, Open Hearth	
5	Best. 2d Qual. 3d Qual. Open Hearth.	
8	To 21 gauge11c 10c 8c c c 1c. extra for each additional gauge. Cut to multiples or specified lengths, 1/4c. extra.	
Ħ	Cut to multiples or specified lengths, %c. extra.	
*	### Auger and Auger Bit	
%	Frog Points and Plates	
% (C	" Side Bars	
(C	and Mattock, beveled (rolled)	
	Table Cutlery, piain	
00	Table Cutlery, beveled	
00	Coal and Granite Wedge83	ŀ
00	Roller. 8c Spingle, subject to Machinery classification. 70	ŀ
00	Forged Crank Pins and Lathe Spindles 8120	ĺ
		l
	Piston Rods, plain	l
	Cruothie, Open Hearth or Beasemer	
3.0	Boiler, Fire-Box and Flue Sheets, not less than 3-16 thick	
er of	thick. Boiler, Fire-Box and Flue Sheets, not less than 1/2 thick. Circulars and corni clean than 70	
8		
-	Locomotive Tenh Secol	l
	Square. Round. Half Round and Flat Bastard. Seinch and over semill Saw. 8-inch and	l
	inch and overse	l
se se	Taper, 314-inch and over	l
e se	Horse and Shoe Rasp	l
7C	Spira Spring Cast Steel	ŀ
96	Tyre Cast Steel	l
90	IX's and over. 886c IX's 15, %xy-16 and 14	١
ic ic	1 and 12-10x1/4 and 5-32, 1/4x3-10 and c-32 91/40 M and 1/4x1/4 and 3-32 and 12 g 100	
50	Solid Safe Cast Steel	
je	Fork and Bake, Crucible	
re	Fork and Rake. Crucible	
c	Hoe. Crucible	
C	Crucible Piow Steet in slabs	
50	Spring40	
re se	Spring	
be Be		
ic ic	Ayle Rillets	
	Sleigh Shoe	
70	Scythe Back Steel	
90	Rolling Coulter Blanks, out and punched	
500	Thrasher Steel 40 Teeth 55%	
oc	Rolled Hammer Billets	
16	Terms.—Four months: a per cent. discount for case, if remitted within ac days.	
10	Rolls and Castings.	
50	Relis and Castings. Furnace Floor and Straightening Plates	
de de	Guide Plates	
le.	Spindies and coupling boxes. 254c Sand kolis and Pinions, large size. 3 c	
ic ic	Pipe Mill Castings. 3490	

ment as heretofore, prices quoted being net.

White and Red Lend.

ictiv Pure White Lead in Oil. in kegs. 65c.: in 25

Tin Pails, 15c. * B over keg price: 125 a Tin

alls. is * B over keg price: assorted, i to 5 B cans,
. per B over keg price: assorted, i to 5 B cans,
. per B over keg price: assorted, i to 5 B cans,
. per B over keg price: assorted, i to 5 B cans,
. per B over keg price: assorted, i to 5 B cans,
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. per B over keg price: assorted, i to 5 B cans,
. per B over keg price: assorted, i to 5 B cans,
. disc in the service of the service of

Window Gines.

	gth.			
Stae.	AA.	A	B.	O.
5 x 8 to 10 x 15	\$8.25	\$7.50	\$7.00	\$6. €
1 × 14 to 16 × 24	9.25	8.50	8,00	7.20
8x 22 to 20 x 30	10.75	9-75	8.75	7.7
5 x 36 to 24 x 30	12.25	10.75	9.00	8, 60
6 x 28 to 24 x 36	13.00	11.50	9.75	0.00
6 x 36 to 26 x 44	14.50	13.24	10.75	9.50
6 x 46 to 30 x 50	15.00	14.00	11.25	10.50
0 X 53 to 30 X 54	16.0c	14.50	13.00	-
0 X 56 to 34 X 56	17.25	\$5,50	13.50	
x 58 to 34 x 60	18,25	17.25	15.00	
6 x 60 to 40 x 60	30.75	18,75	17.26	
Double Strength.				
5 x 8 to 10 x 15	13.74	11.75	10.75	10,00
1 X 14 to 16 X 34	14.50	13,25	12.50	11.31
5 X 22 to 20 X 30	17.25	15.75	14.00	
x 36 to 24 * 30	19-75	17.25	14.50	
5 x 26 to 24 x 36	31,00	18.50	15.75	
5 x 36 to 20 x 44	23.25	21.25	17.25	
5 x 46 to 3c x 50	24.00	22.50	18,00	
X 52 to 30 X 54	25.75	23.25	19.24	
x 50 to 34 x 56	87.75	35.00	31.78	
x 58 to 34 x 60	29.25	27.79	24.00	
6 x 60 to 40 x 60	33.25	30,00	37.75	

inches in length and not making more than 81 united

	Hubbard, Bakewell & Co.'s Goods.	
Axe	, Single Bit, Lippincott Per dos, \$	8
0.0	" James & Co "	2.
6.6	Double Bit, Lippincott " I James & Co " 1	É.
0.0	" James & Co " 1	2.
Drai	n Tools, listdis	
Hoe	, Planters' dis	2
0.0	Scovill Patterndis	2
34	Handled, Square Eye, Germandis	3
EZ a m	dies, Cross CutPer aoz 8	
man	Showel Bent Dougd Diveted	3
a	Shovel, Bent, Bored, Riveted "	3
38 W	s, Circulardis	
41	Longdis	4
	Cross Cut, H. B. & Co., Champion, Per ft.	
	net	D,
54	Cross Cut, Lippincott, Champion. Per ft.	
	net	
Shov	els, listdis	2
Spad	es, " dis	2
Scoo		

YALE CASTER. Nine Sizes Ready.

Floor Wheels Ranging from 1 2-10 to 4 inches Diameter. For Furniture of all kinds, Factory Trucks, or Any-thing that Needs a Caster. No Wear-

ing of Carpets. Turns Easily on Two Friction Holters. A Perfect-Working

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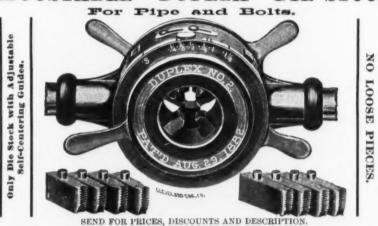
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DOTY'S AUTOMATIC REVOLVING SCRAPERS, WHEELBARROWS, ROAD PLOWS, &c. For Prices, Terms &c., address

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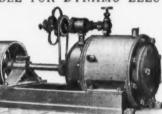
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The Best and most Economical High Speed Engine made. WILL OUTWEAR ALL OTHERS.

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Hoisting Engine No Dead Centre, and will Start in any

TESTIMONIALS.



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IN THE WORLD CATALOGUE.

COLT'S PAT. FIRE ARMS CO., Hartford, Conn. or LEONARD & McCOY, 118 Liberty St., New York.

PHILADELPHIA BLACK LEAD CRUCIBLE





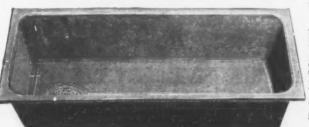


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We furnish these sinks painted or galvanized, as desired, at prices -freedom from breakage considered-less than for sinks made from cast iron.

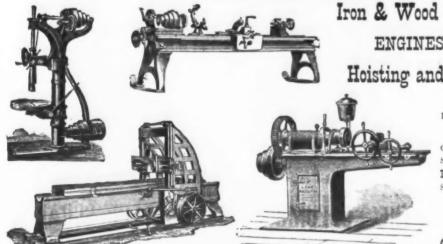


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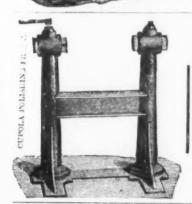
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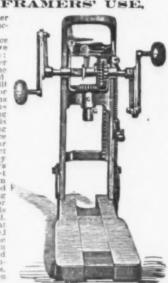
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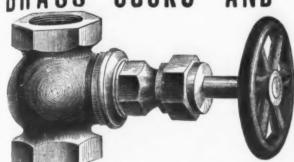
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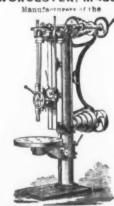
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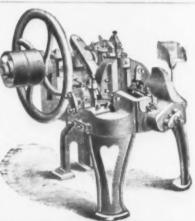
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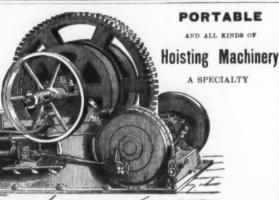


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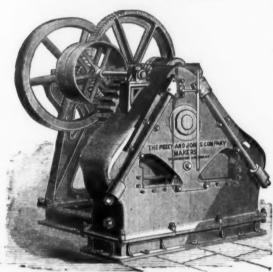


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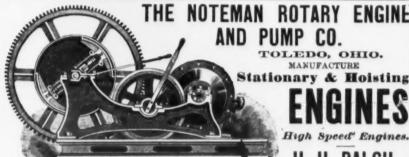
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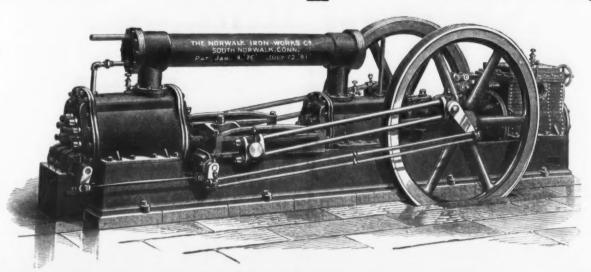
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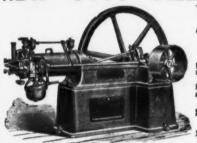
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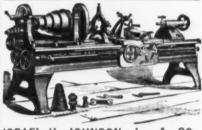
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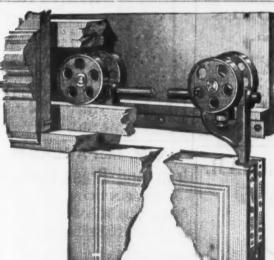
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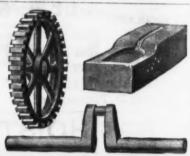
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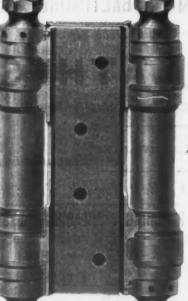
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